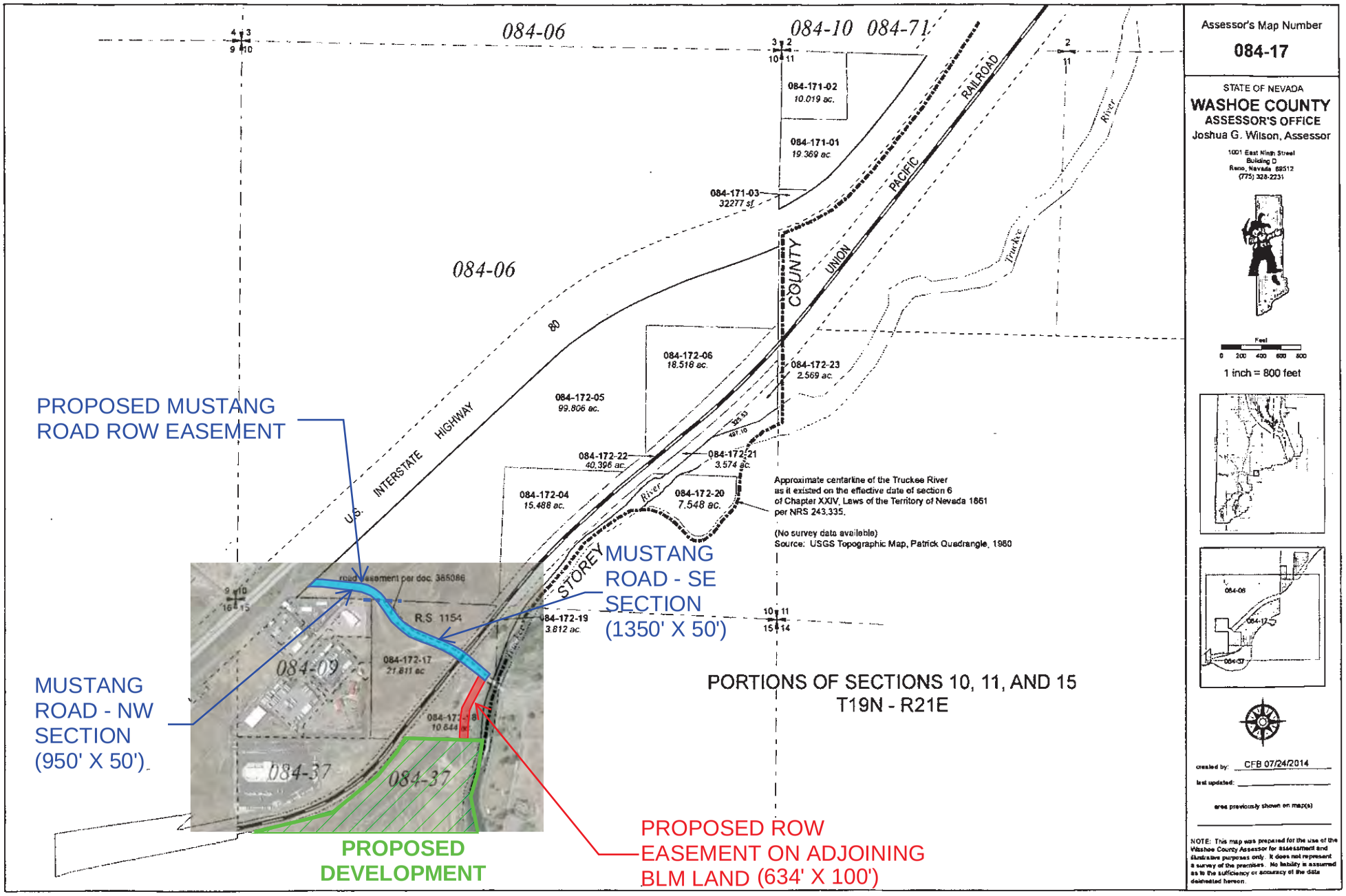
ATTACHMENT A

Proposed Right-of-Way Exhibit, dated September 10, 2015

PROPOSED RIGHT-OF-WAY EXHIBIT



9/10/2015

ATTACHMENT B

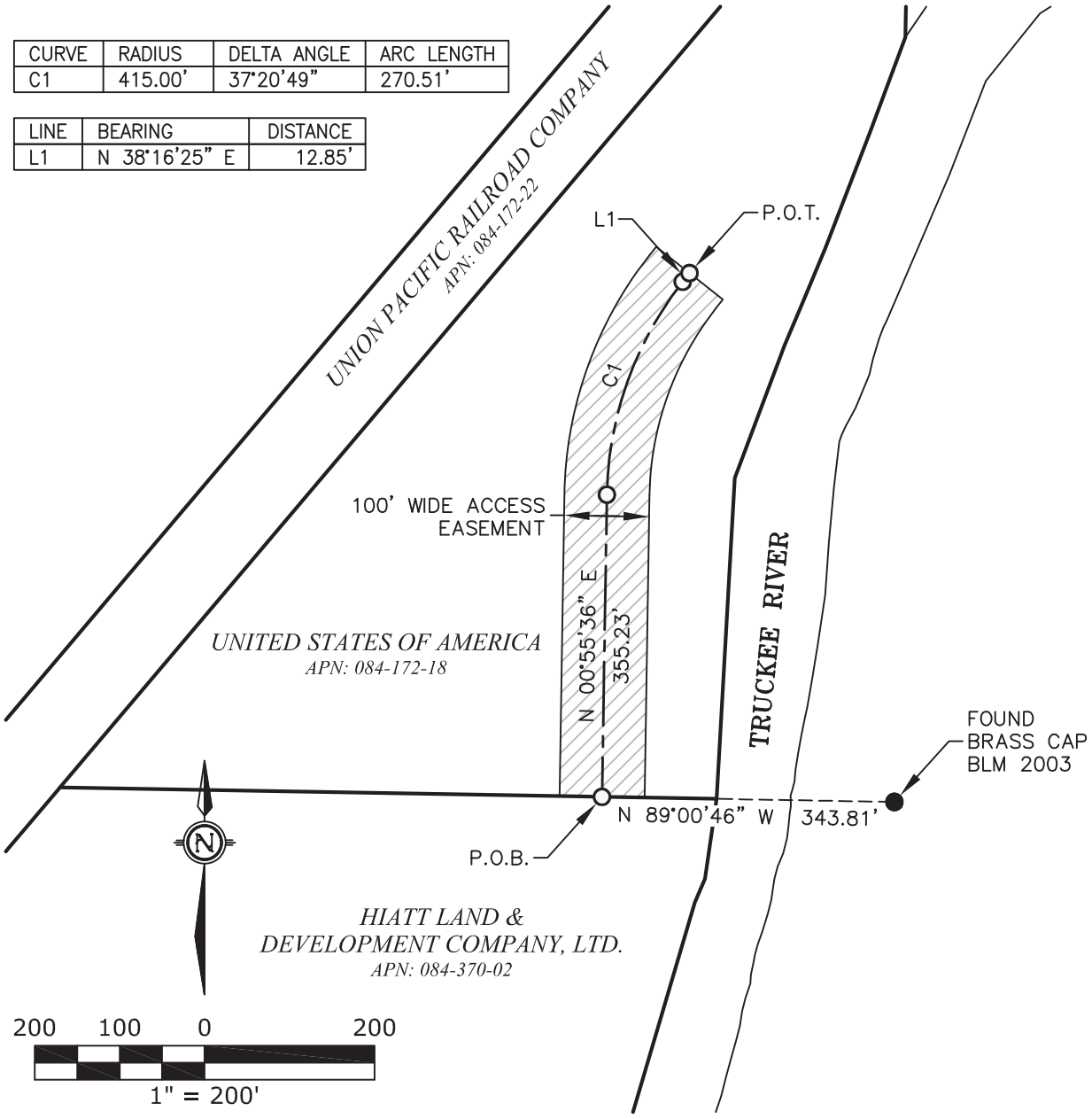
Access Easement Exhibits A1-D (DRAFT), by US Geomatics

BASIS OF BEARING:
NORTH WAS ESTABLISHED WITH GPS OBSERVATIONS USING THE NEVADA STATE PLANE COORDINATE SYSTEM (WEST ZONE, NAD83).

TOTAL AREA OF EASEMENT:
1.47 ACRES ±

CURVE	RADIUS	DELTA ANGLE	ARC LENGTH
C1	415.00'	37°20'49"	270.51'

LINE	BEARING	DISTANCE
L1	N 38°16'25" E	12.85'



US GEOMATICS
P.O. Box 3299
Reno, NV 89505
p. 775.786.5111
f. 775.786.5114
www.usgeomatics.com

EXHIBIT A1

SCANNELL PROPERTIES
ACCESS EASEMENT

A PORTION OF THE NE 1/4 OF THE NW 1/4 OF SECTION 15, T.19N., R.21E., M.D.M.

WASHOE COUNTY NEVADA

SHEET 1 of 1

EXHIBIT A

LEGAL DESCRIPTION FOR AN ACCESS EASEMENT

A one-hundred (100) foot wide strip of land situated in the Northeast Quarter of the Northwest Quarter of Section 15, Township 19 North, Range 21 East, Mount Diablo Meridian, in Washoe County, Nevada, lying fifty (50) feet on either side of a centerline which is more particularly described as follows:

COMMENCING at a found brass cap stamped “Bureau of Land Management, 2003” at the southeast corner of the Northeast Quarter of the Northwest Quarter of said Section 15;

THENCE, North 89°00'46" West, a distance of 343.81 feet along the southerly boundary of the Northeast Quarter of the Northwest Quarter of said Section 15 to the **POINT OF BEGINNING**;

THENCE, North 00°55'36" East, a distance of 355.23 feet;

THENCE, a distance of 270.51 feet along the arc of a tangent curve to the right, having a radius of 415.00 feet, through a central angle of 37°20'49";

THENCE, North 38°16'25" East, a distance of 12.85 feet to the **POINT OF TERMINATION**.

The sidelines of said easement are to be lengthened or shortened so as to terminate upon the end lines.

Containing 1.47 acres of land, more or less.

BASIS OF BEARING:
North was established with GPS observations using the Nevada State Plane Coordinate System (West Zone, NAD83).

See attached Exhibit A1 for a depiction of the above legal description.

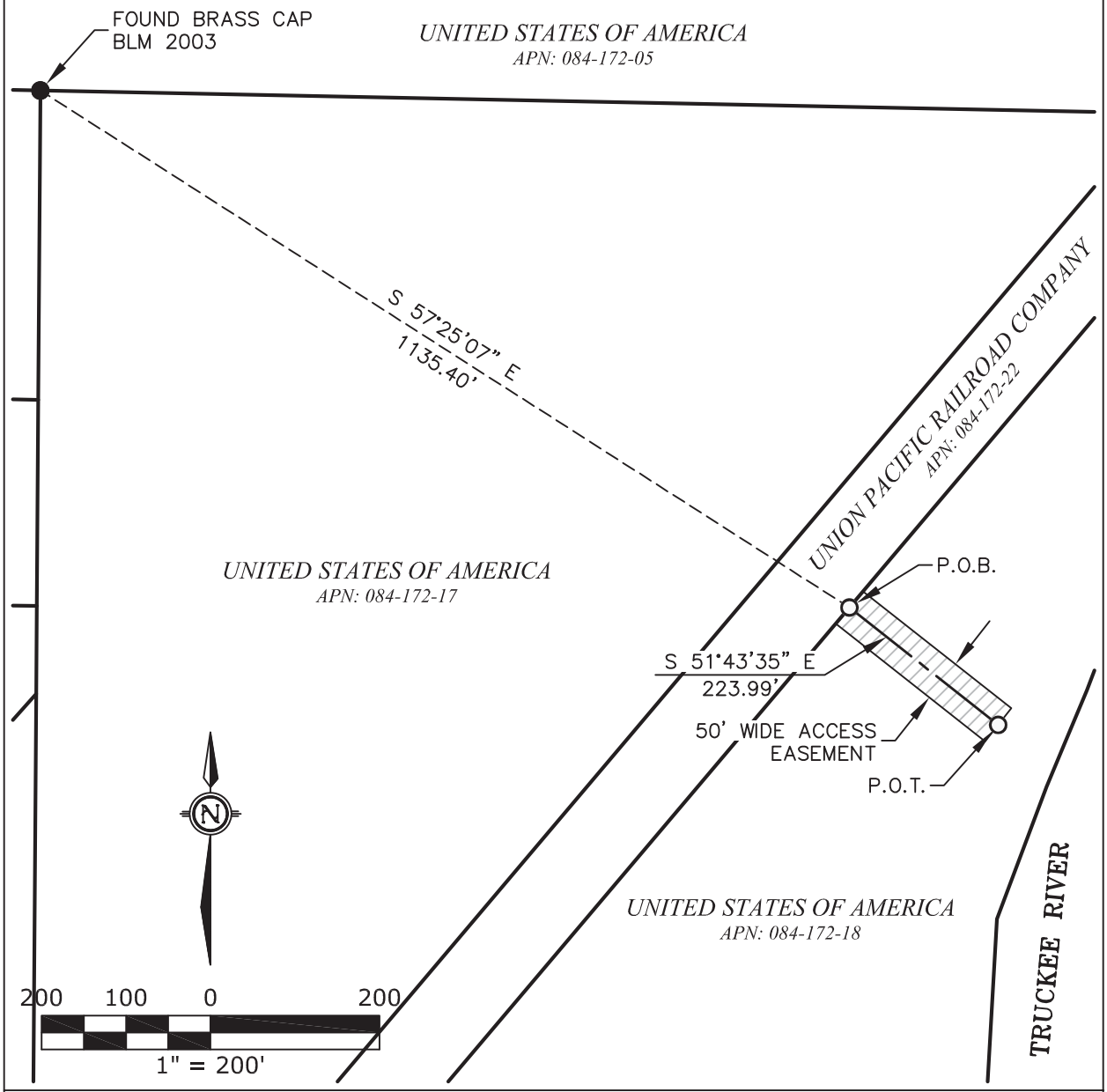
Prepared by:

Glen C. Armstrong, PLS
Nevada Certificate No. 16451
US Geomatics
227 Vine Street
PO Box 3299
Reno, Nevada, 89505

DRAFT

BASIS OF BEARING:
NORTH WAS ESTABLISHED WITH GPS OBSERVATIONS USING THE NEVADA STATE PLANE COORDINATE SYSTEM (WEST ZONE, NAD83).

TOTAL AREA OF EASEMENT:
0.26 ACRES ±



US GEOMATICS
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www.usgeomatics.com

EXHIBIT B1

SCANNELL PROPERTIES
ACCESS EASEMENT

A PORTION OF THE NE 1/4 OF THE NW 1/4 OF SECTION 15, T.19N., R.21E., M.D.M.

WASHOE COUNTY NEVADA

SHEET
1
of
1

EXHIBIT B

LEGAL DESCRIPTION FOR AN ACCESS EASEMENT

A fifty (50) foot wide strip of land situated in the Northeast Quarter of the Northwest Quarter of Section 15, Township 19 North, Range 21 East, Mount Diablo Meridian, in Washoe County, Nevada, lying twenty-five (25) feet on either side of a centerline which is more particularly described as follows:

COMMENCING at a found brass cap stamped “Bureau of Land Management, 2003” at the northwest corner of the Northeast Quarter of the Northwest Quarter of said Section 15;

THENCE, South 57°25'07" East, a distance of 1135.40 feet to the **POINT OF BEGINNING** on the southeasterly edge of the Union Pacific Railroad right-of-way;

THENCE, South 51°43'35" East, a distance of 223.99 feet to the **POINT OF TERMINATION**.

The sidelines of said easement are to be lengthened or shortened so as to terminate upon the end lines.

Containing 0.26 acres of land, more or less.

BASIS OF BEARING:
North was established with GPS observations using the Nevada State Plane Coordinate System (West Zone, NAD83).

See attached Exhibit B1 for a depiction of the above legal description.

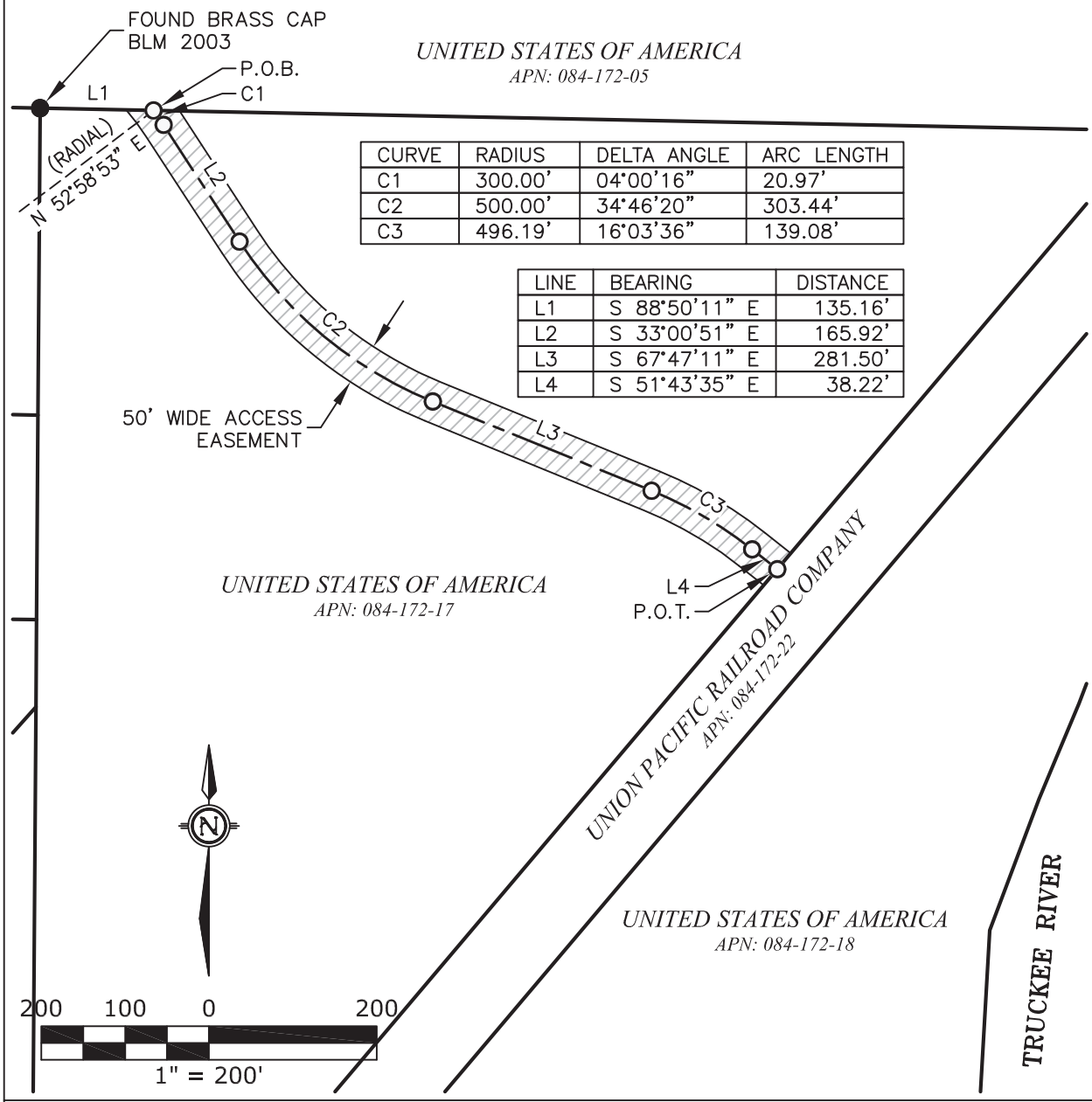
Prepared by:

Glen C. Armstrong, PLS
Nevada Certificate No. 16451
US Geomatics
227 Vine Street
PO Box 3299
Reno, Nevada, 89505

DRAFT

BASIS OF BEARING:
NORTH WAS ESTABLISHED WITH GPS OBSERVATIONS USING THE NEVADA STATE PLANE COORDINATE SYSTEM (WEST ZONE, NAD83).

TOTAL AREA OF EASEMENT:
1.09 ACRES ±



CURVE	RADIUS	DELTA ANGLE	ARC LENGTH
C1	300.00'	04°00'16"	20.97'
C2	500.00'	34°46'20"	303.44'
C3	496.19'	16°03'36"	139.08'

LINE	BEARING	DISTANCE
L1	S 88°50'11" E	135.16'
L2	S 33°00'51" E	165.92'
L3	S 67°47'11" E	281.50'
L4	S 51°43'35" E	38.22'

US GEOMATICS
P.O. Box 3299
Reno, NV 89505
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www.usgeomatics.com

EXHIBIT C1

SCANNELL PROPERTIES
ACCESS EASEMENT

A PORTION OF THE NE 1/4 OF THE NW 1/4 OF SECTION 15, T.19N., R.21E., M.D.M.

WASHOE COUNTY NEVADA

SHEET 1 of 1

EXHIBIT C

LEGAL DESCRIPTION FOR AN ACCESS EASEMENT

A fifty (50) foot wide strip of land situated in the Northeast Quarter of the Northwest Quarter of Section 15, Township 19 North, Range 21 East, Mount Diablo Meridian, in Washoe County, Nevada, lying twenty-five (25) feet on either side of a centerline which is more particularly described as follows:

COMMENCING at a found brass cap stamped “Bureau of Land Management, 2003” at the northwest corner of the Northeast Quarter of the Northwest Quarter of said Section 15;

THENCE, South 88°50'11" East, a distance of 135.16 feet along the northerly boundary of the Northeast Quarter of the Northwest Quarter of said Section 15 to the **POINT OF BEGINNING**;

THENCE, a distance of 20.97 feet along the arc of a non-tangent curve to the right, having a radius of 300.00 feet, through a central angle of 4°00'16", and a radial line to the beginning of said curve to the right bearing North 52°58'53" East;

THENCE, South 33°00'51" East, a distance of 165.92 feet;

THENCE, a distance of 303.44 feet along the arc of a tangent curve to the left, having a radius of 500.00 feet, through a central angle of 34°46'20";

THENCE, South 67°47'11" East, a distance of 281.50 feet;

THENCE, a distance of 139.08 feet along the arc of a tangent curve to the right, having a radius of 496.19 feet, through a central angle of 16°03'36";

THENCE, South 51°43'35" East, a distance of 38.22 feet to the **POINT OF TERMINATION** on the northwesterly edge of the Union Pacific Railroad right-of-way;

The sidelines of said easement are to be lengthened or shortened so as to terminate upon the end lines.

Containing 1.09 acres of land, more or less.

BASIS OF BEARING:
North was established with GPS observations using the Nevada State Plane Coordinate System (West Zone, NAD83).

See attached Exhibit C1 for a depiction of the above legal description.

Prepared by:

Glen C. Armstrong, PLS
Nevada Certificate No. 16451
US Geomatics
227 Vine Street
PO Box 3299
Reno, Nevada, 89505

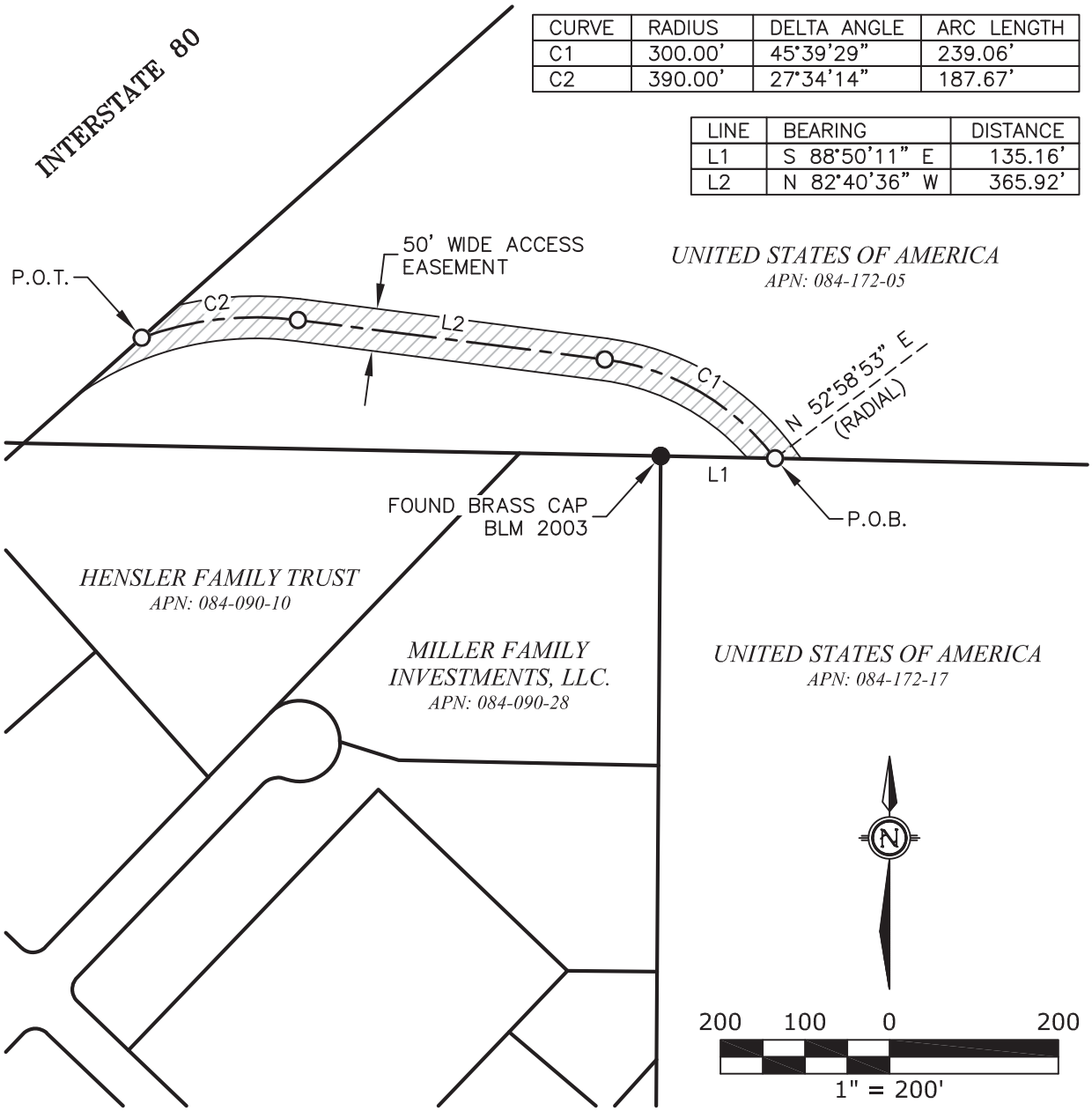
DRAFT

BASIS OF BEARING:
NORTH WAS ESTABLISHED WITH GPS OBSERVATIONS USING THE NEVADA STATE PLANE COORDINATE SYSTEM (WEST ZONE, NAD83).

TOTAL AREA OF EASEMENT:
0.92 ACRES ±

CURVE	RADIUS	DELTA ANGLE	ARC LENGTH
C1	300.00'	45°39'29"	239.06'
C2	390.00'	27°34'14"	187.67'

LINE	BEARING	DISTANCE
L1	S 88°50'11" E	135.16'
L2	N 82°40'36" W	365.92'



US GEOMATICS
P.O. Box 3299
Reno, NV 89505
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f. 775.786.5114
www.usgeomatics.com

EXHIBIT D1

SCANNELL PROPERTIES
ACCESS EASEMENT

A PORTION OF THE S 1/2 OF THE SW 1/4 OF SECTION 10, T.19N., R.21E., M.D.M.

WASHOE COUNTY NEVADA

SHEET 1 of 1

EXHIBIT D

LEGAL DESCRIPTION FOR AN ACCESS EASEMENT

A fifty (50) foot wide strip of land situated in the South Half of the Southwest Quarter of Section 10, Township 19 North, Range 21 East, Mount Diablo Meridian, in Washoe County, Nevada, lying twenty-five (25) feet on either side of a centerline which is more particularly described as follows:

COMMENCING at a found brass cap stamped “Bureau of Land Management, 2003” at the southwest corner of the Southeast Quarter of the Southwest Quarter of said Section 10;

THENCE, South 88°50'11" East, a distance of 135.16 feet along the southerly boundary of the Southeast Quarter of the Southwest Quarter of said Section 10 to the **POINT OF BEGINNING**;

THENCE, a distance of 239.06 feet along the arc of a non-tangent curve to the left, having a radius of 300.00 feet, through a central angle of 45°39'29", and a radial line to the beginning of said curve to the left bearing North 52°58'53" East;

THENCE, North 82°40'36" West, a distance of 365.92 feet;

THENCE, a distance of 187.67 feet along the arc of a tangent curve to the left, having a radius of 390.00 feet, through a central angle of 27°34'14", to the **POINT OF TERMINATION** on the southeasterly edge of the Interstate 80 right-of-way;

The sidelines of said easement are to be lengthened or shortened so as to terminate upon the end lines.

Containing 0.92 acres of land, more or less.

BASIS OF BEARING:
North was established with GPS observations using the Nevada State Plane Coordinate System (West Zone, NAD83).

See attached Exhibit D1 for a depiction of the above legal description.

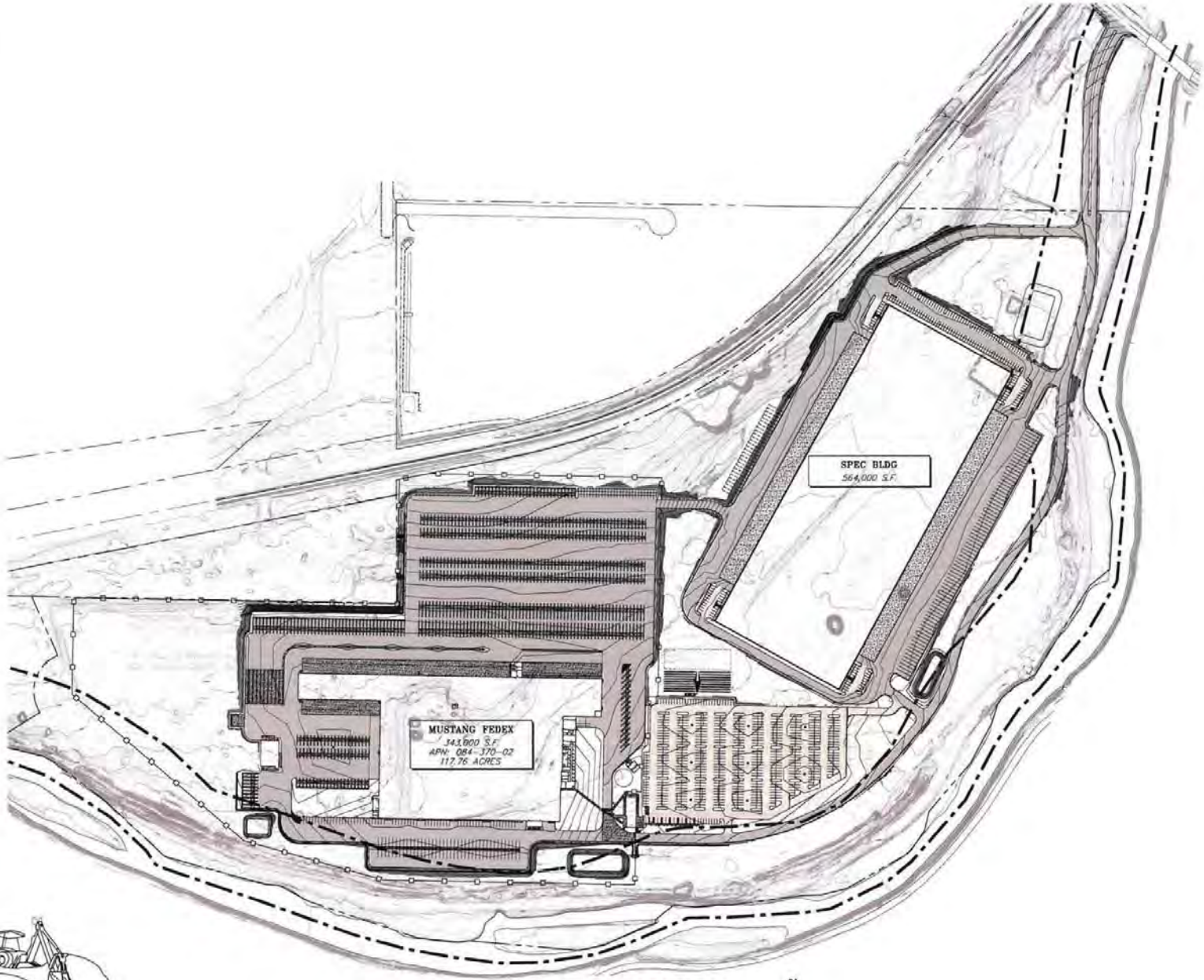
Prepared by:

Glen C. Armstrong, PLS
Nevada Certificate No. 16451
US Geomatics
227 Vine Street
PO Box 3299
Reno, Nevada, 89505

DRAFT

ATTACHMENT C

Mustang Industrial Development Site & Grading Plans, by Tectonics Design Group, dated September 23, 2015



OVERALL SITE PLAN - ALT SPEC BLDG

SCALE: 1" = 150'-0"

2 DAYS BEFORE
YOU DIG CALL USA
TOLL FREE 1-800-227-2600

All drawings herein are the property of Tectonics Design Group and may not be reproduced or used in any capacity without the written authorization of Tectonics Design Group.

DRAWN: L.P.A.
DESIGNED: L.P.A.
CHECKED/STAMPED: MATT K. RASMUSSEN, P.E.

PRELIMINARY DESIGN

TECTONICS DESIGN GROUP

Mustang Industrial Development
McCarren, NV

Scannell Properties
821 Meander Court, Suite 200, Medina, Minnesota 55340

DATE: 09/23/16
SUBMITTAL

OVERALL SITE PLAN

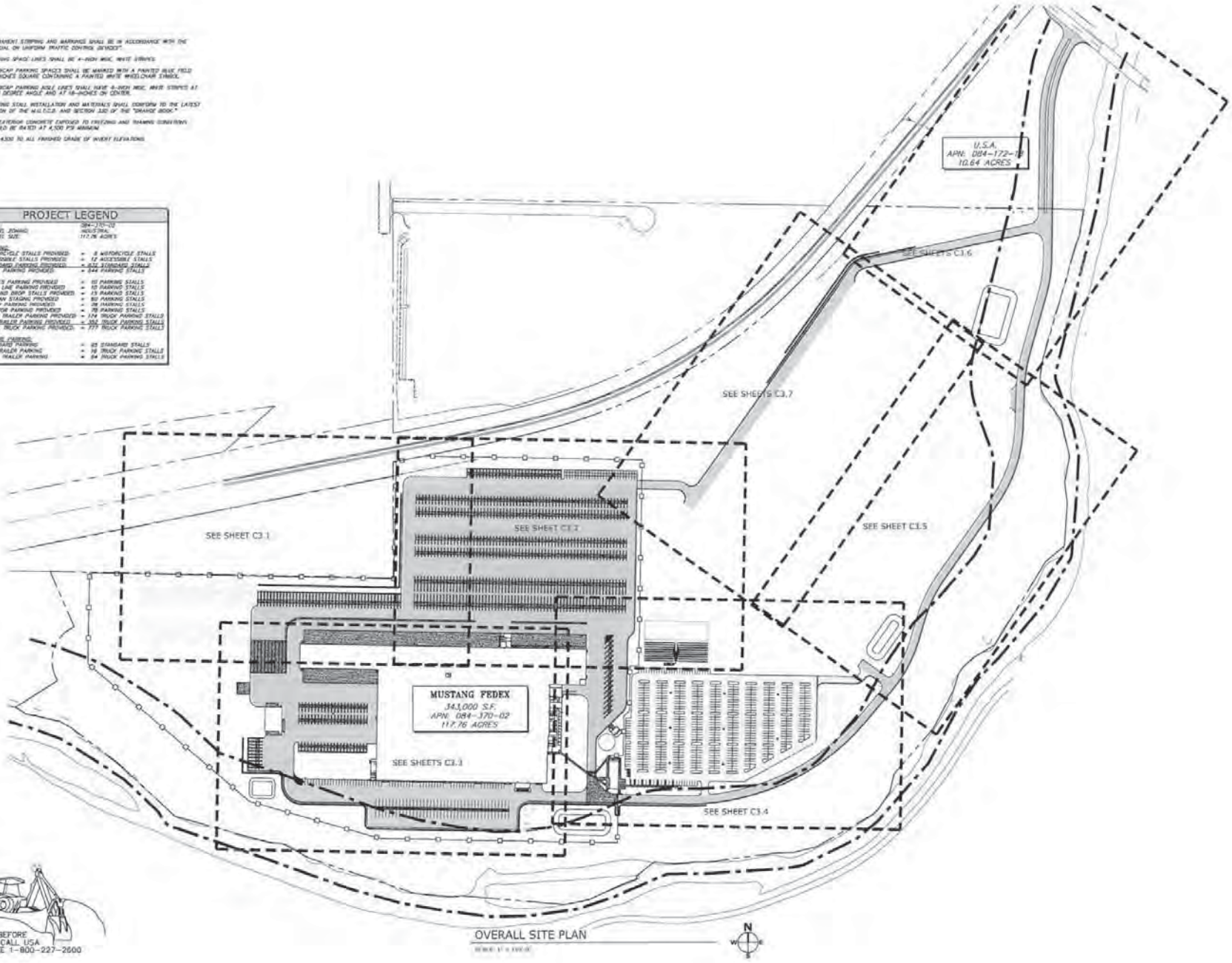
EX.3

NOTES:

1. PERMANENT STRIPING AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
2. PARKING SPACE LINES SHALL BE 4-INCH WIDE, WHITE STRIPES.
3. HANDICAP PARKING SPACES SHALL BE MARKED WITH A PAINTED BLUE FIELD 48-INCHES SQUARE CONTAINING A PAINTED WHITE WHEELCHAIR SYMBOL.
4. HANDICAP PARKING AISLE LINES SHALL HAVE 4-INCH WIDE, WHITE STRIPES AT A 45 DEGREE ANGLE AND AT 18-INCHES ON CENTER.
5. PARKING STALL INSTALLATION AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE M.U.T.C.D. AND SECTION 330 OF THE "ORANGE BOOK."
6. ALL EXTERIOR CONCRETE EXPOSED TO FREEZING AND THAWING CONDITIONS SHOULD BE RATED AT 4,500 PSI MINIMUM.
7. ADD 4300 TO ALL FINISHED GRADE OF INVERT ELEVATIONS.

PROJECT LEGEND

A.P.N.	084-370-02
PARCEL ZONING	INDUSTRIAL
PARCEL SIZE	117.76 ACRES
PARKING:	
MOTORCYCLE STALLS PROVIDED	= 8 MOTORCYCLE STALLS
ACCESSIBLE STALLS PROVIDED	= 12 ACCESSIBLE STALLS
STANDARD PARKING PROVIDED	= 632 STANDARD STALLS
TOTAL PARKING PROVIDED	= 644 PARKING STALLS
TRIPLES PARKING PROVIDED	= 10 PARKING STALLS
DEAD LINE PARKING PROVIDED	= 10 PARKING STALLS
INBOUND DROP STALLS PROVIDED	= 13 PARKING STALLS
NO VAN STAGING PROVIDED	= 80 PARKING STALLS
DOLLY PARKING PROVIDED	= 28 PARKING STALLS
TRACTOR PARKING PROVIDED	= 78 PARKING STALLS
LONG TRAILER PARKING PROVIDED	= 174 TRUCK PARKING STALLS
28' TRAILER PARKING PROVIDED	= 352 TRUCK PARKING STALLS
TOTAL TRUCK PARKING PROVIDED	= 777 TRUCK PARKING STALLS
FUTURE PARKING:	
STANDARD PARKING	= 25 STANDARD STALLS
28' TRAILER PARKING	= 16 TRUCK PARKING STALLS
LONG TRAILER PARKING	= 64 TRUCK PARKING STALLS



2 DAYS BEFORE
YOU DIG CALL USA
TOLL FREE 1-800-227-2600

OVERALL SITE PLAN

All drawings herein are the property of Tectonics Design Group and may not be reproduced or used in any capacity without the written authorization of Tectonics Design Group.

DRAWN: J.P.S.
DESIGNED: J.P.S.
CHECKED/STAMPED: MATT W. RASMUSSEN, P.E.

PRELIMINARY DESIGN

TECTONICS DESIGN GROUP

Mustang Industrial Development
McCarren, NV

Scannell Properties
821 Meander Court, Suite 200, Medina, Minnesota 55340

DATE: 08/23/19

OVERALL SITE PLAN

C1.0

PRELIMINARY ESTIMATED EARTHWORK QUANTITIES (TO SUB-GRADE):

CUT: 314,000 CY CUT
FILL: 306,000 CY FILL
TOTAL: 8,000 CY EXPORT
NOTE: THESE ARE ESTIMATED QUANTITIES ONLY. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT PROJECT TO LINES AND GRADES AS SHOWN ON THE PLANS.

NOTES:

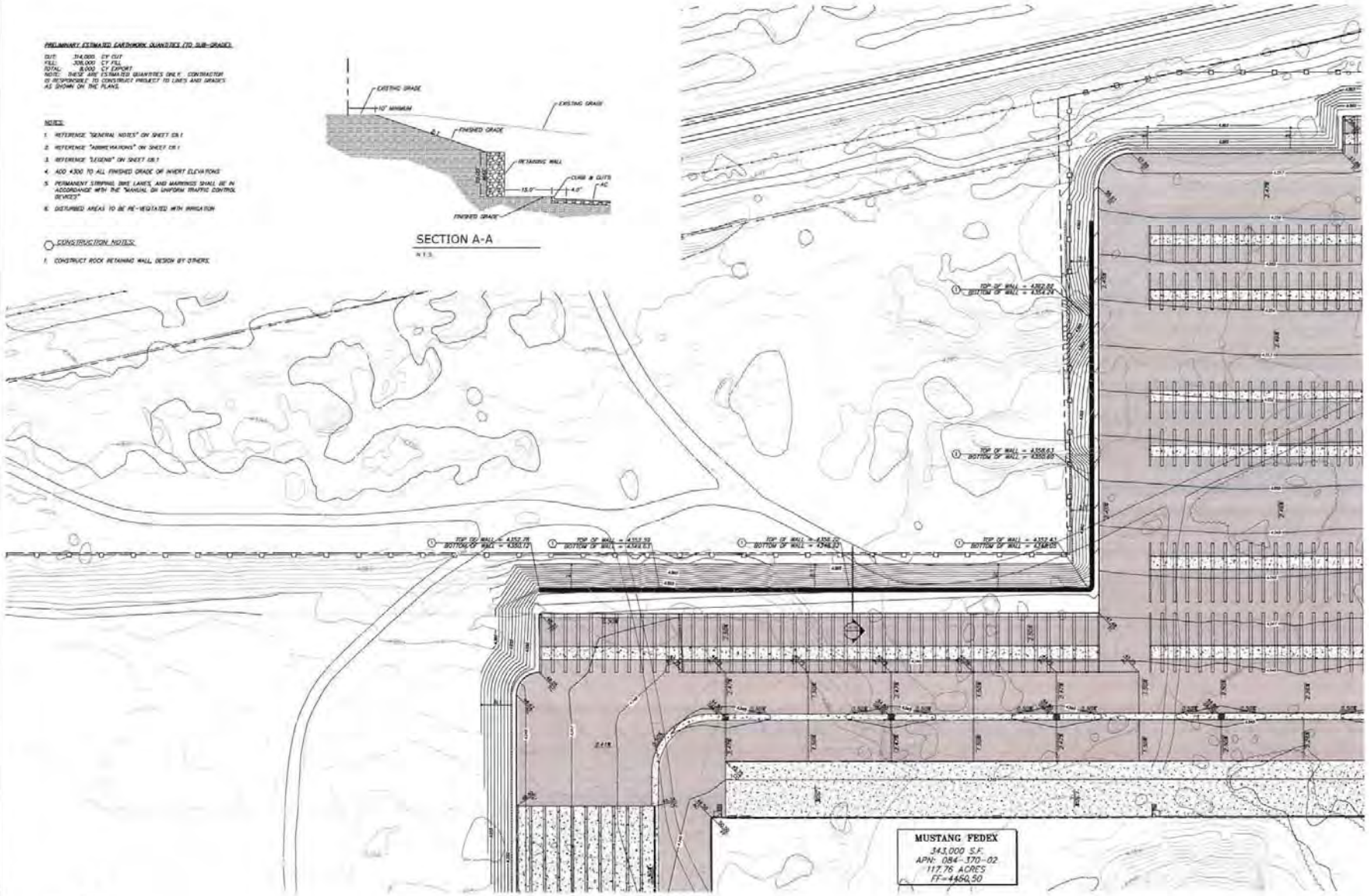
1. REFERENCE "GENERAL NOTES" ON SHEET C8.1
2. REFERENCE "ABBREVIATIONS" ON SHEET C8.1
3. REFERENCE "LEGEND" ON SHEET C8.1
4. ADD 4300 TO ALL FINISHED GRADE OR INVERT ELEVATIONS
5. PERMANENT STRIPING, BIKE LANES, AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
6. DISTURBED AREAS TO BE RE-VEGETATED WITH IRRIGATION

CONSTRUCTION NOTES:

1. CONSTRUCT ROCK RETAINING WALL, DESIGN BY OTHERS.

SECTION A-A

N.T.S.



2 DAYS BEFORE
YOU DIG CALL USA
TOLL FREE 1-800-227-2600

GRADING PLAN

SCALE: 1" = 40'

All drawings herein are the property of Tectonics Design Group and may not be reproduced or used in any capacity without the written authorization of Tectonics Design Group.

DRAWN: L.P.B.
DESIGNED: L.P.B.
CHECKED/STAMPED: MATT K. RASMUSSEN, P.E.

PRELIMINARY DESIGN

TECTONICS DESIGN GROUP
10451 Double R Boulevard
Reno, NV 89521
tel 775-824-9999
fax 775-824-9988
www.tdg-rec.com

Mustang Industrial Development

McCarren, NV

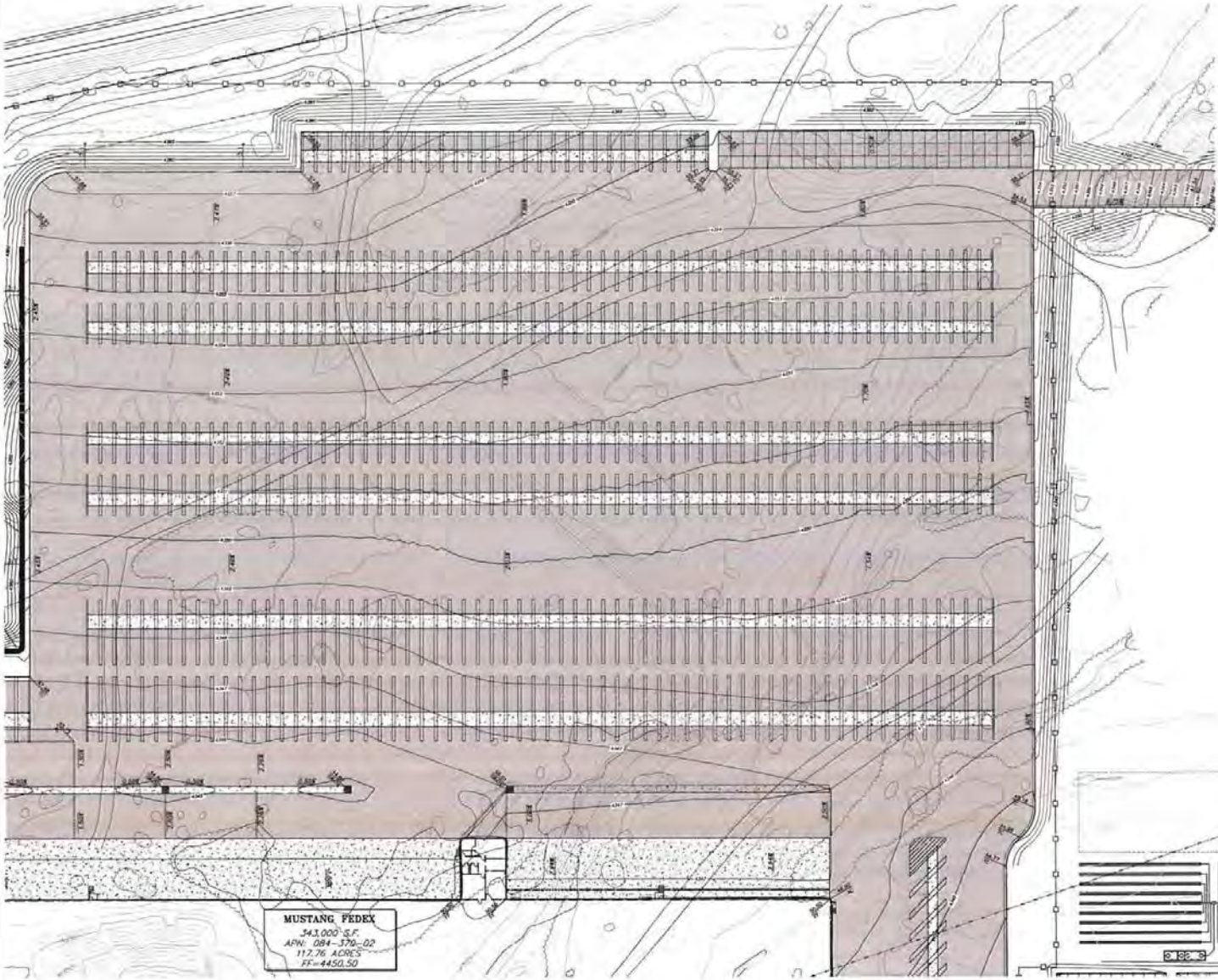
Scannell Properties

821 Meander Court, Suite 200, Medina, Minnesota 55340

DATE: 09/23/18
SUBMITTAL

GRADING PLAN

C3.1



PRELIMINARY ESTIMATED EARTHWORK QUANTITIES (TO SUB-GRADE):

CUT: 314,000 CY CUT
FILL: 306,000 CY FILL
TOTAL: 8,000 CY EXPORT
NOTE: THESE ARE ESTIMATED QUANTITIES ONLY. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT PROJECT TO LINES AND GRADES AS SHOWN ON THE PLANS.

NOTES:

1. REFERENCE "GENERAL NOTES" ON SHEET C6.1
2. REFERENCE "ABBREVIATIONS" ON SHEET C6.1
3. REFERENCE "LEGEND" ON SHEET C6.1
4. ADD 4300 TO ALL FINISHED GRADE OR INVERT ELEVATIONS
5. PERMANENT STRIPING, BIKE LANES, AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
6. DISTURBED AREAS TO BE RE-VEGETATED WITH IRRIGATION

CONSTRUCTION NOTES:

1. CONSTRUCT ROCK RETAINING WALL, DESIGN BY OTHERS

2 DAYS BEFORE
YOU DIG CALL USA
TOLL FREE 1-800-227-2600

GRADING PLAN

SCALE: 1" = 40'

N
W E
S

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COPYRIGHT:

DRAWN: L.P.B.
DESIGNED: L.P.B.
CHECKED/STAMPED: MATT K. BASHUSSEN, P.E.

STAMP:

PRELIMINARY DESIGN

TECTONICS DESIGN GROUP
10451 Double R Boulevard
Reno, NV 89521
www.tdg-inc.com
tel: 775-824-9980
fax: 775-824-9980

RESIDUAL:

PROJECT/CLIENT:

Mustang Industrial Development
McCarren, NV

Scannell Properties
821 Meander Court, Suite 200, Medina, Minnesota 55340

SUBMITTAL:

DATE: 05/23/15

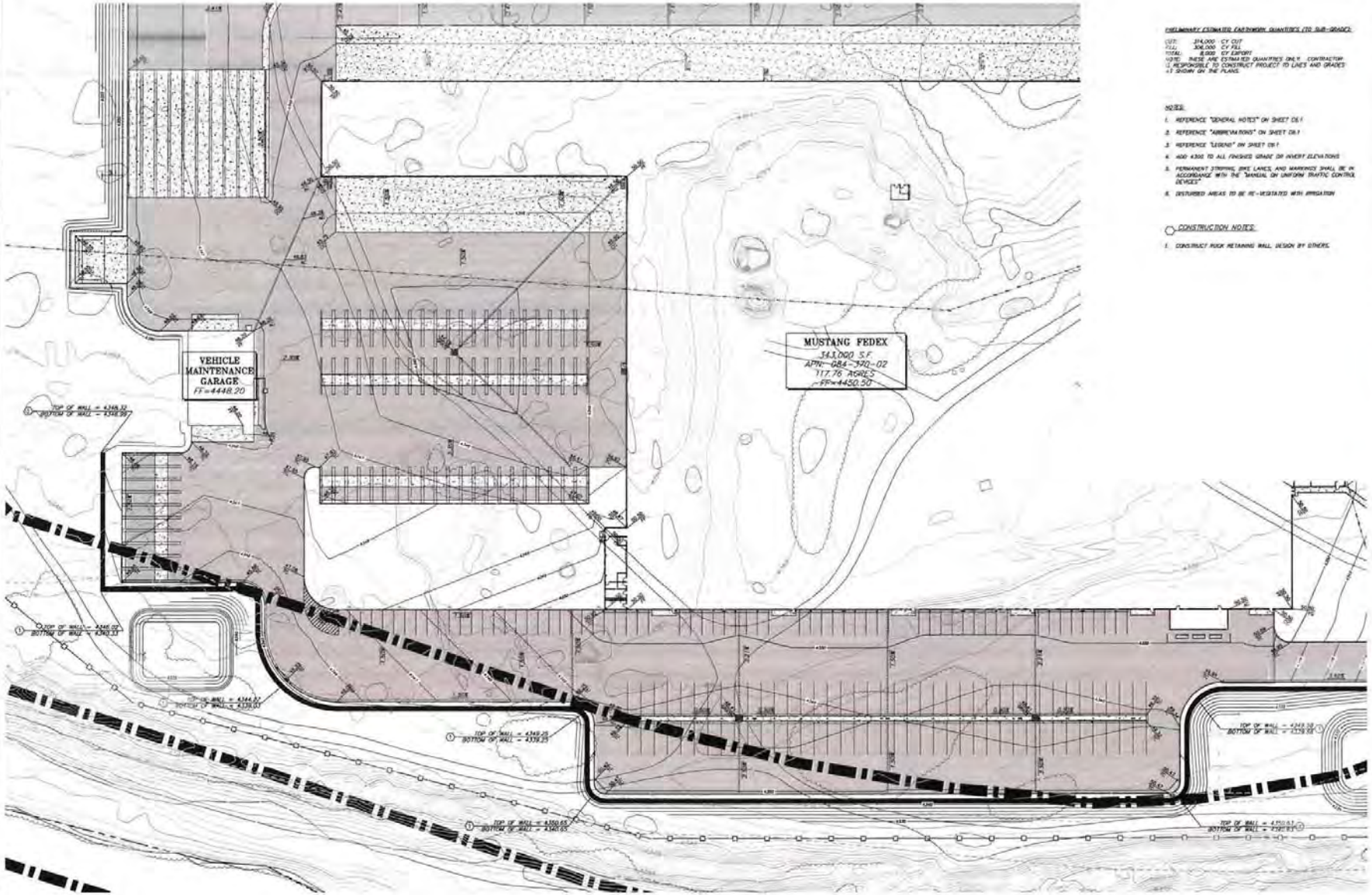
SUBMITTAL RECORD:

SHEET TITLE:

GRADING PLAN

SHEET:

C3.2



PRELIMINARY ESTIMATED EARTHWORK QUANTITIES (TO SUB-GRADE):

CUT: 314,000 CY CUT
FILL: 306,000 CY FILL
TOTAL: 8,000 CY EXPORT
NOTE: THESE ARE ESTIMATED QUANTITIES ONLY. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT PROJECT TO LINES AND GRADES AT SHOWN ON THE PLANS.

NOTES:

1. REFERENCE "GENERAL NOTES" ON SHEET C6.1
2. REFERENCE "ABBREVIATIONS" ON SHEET C6.1
3. REFERENCE "LEGEND" ON SHEET C6.1
4. ADD 4300 TO ALL FINISHED GRADE OR INVERT ELEVATIONS
5. PERMANENT STRIPING, BIKE LANES, AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
6. DISTURBED AREAS TO BE RE-VEGETATED WITH IRRIGATION

CONSTRUCTION NOTES:

1. CONSTRUCT ROCK RETAINING WALL, DESIGN BY OTHERS.

2 DAYS BEFORE YOU DIG CALL USA TOLL FREE 1-800-227-2600

GRADING PLAN

SCALE: 1" = 10'

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DRAWN: J.P.B.
DESIGNED: J.P.B.
CHECKED/STAMPED: MATT K. RASMUSSEN, P.E.

PRELIMINARY DESIGN

TECTONICS DESIGN GROUP
13451 Dresden R Boulevard
Reno, NV 89511
tel 775-624-9988
fax 775-624-9988
www.tdg-inc.com

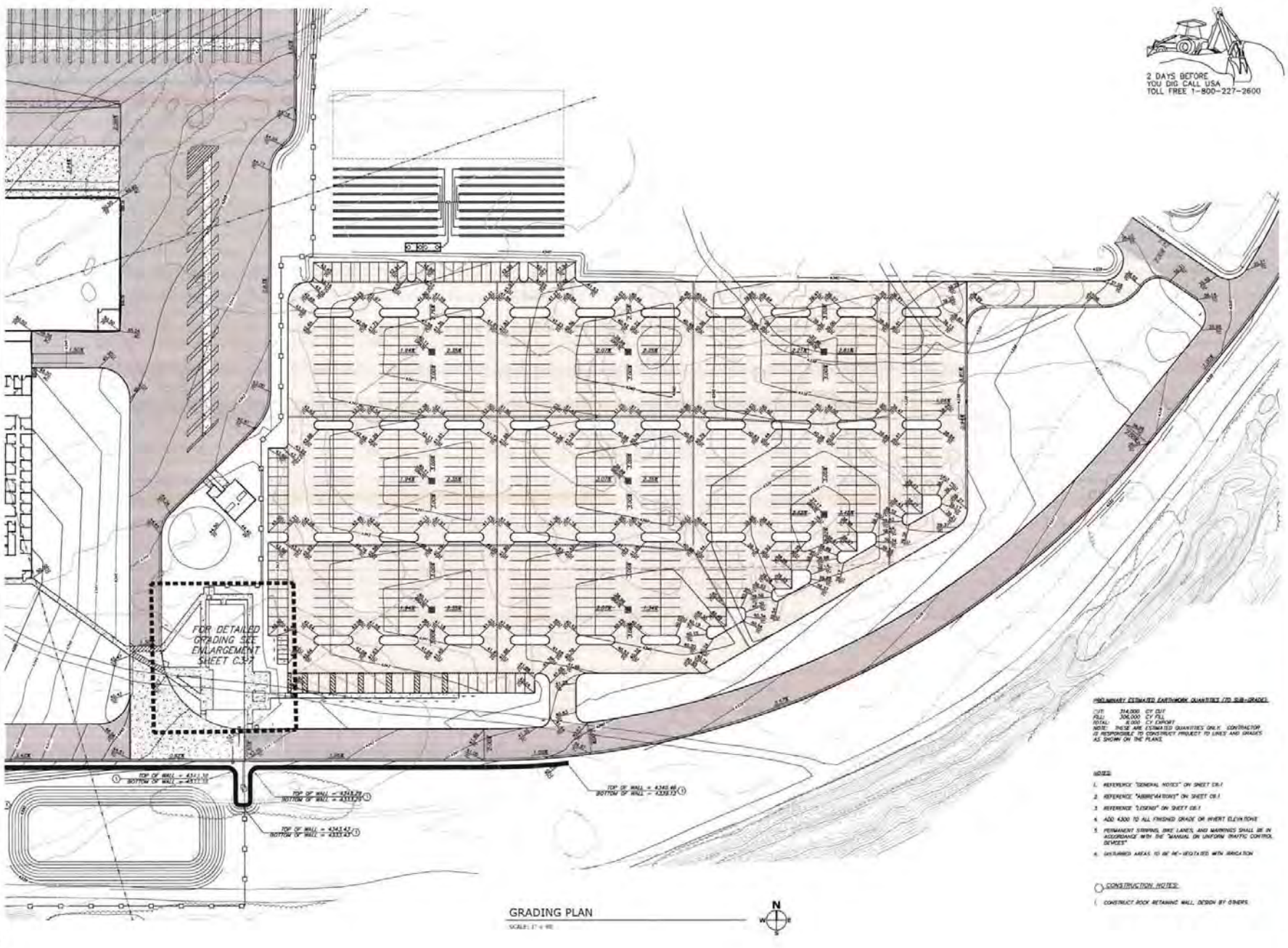
Mustang Industrial Development
McCarren, NV

Scannell Properties
821 Meander Court, Suite 200, Medina, Minnesota 55340

DATE: 09/23/15
SUBMITTAL

GRADING PLAN

C3.3



GRADING PLAN

SCALE: 1" = 40'

PRELIMINARY ESTIMATED EARTHWORK QUANTITIES (TO SUB-GRADE):

CUT: 314,000 CY CUT
FILL: 306,000 CY FILL
TOTAL: 8,000 CY EXPORT
NOTE: THESE ARE ESTIMATED QUANTITIES ONLY. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT PROJECT TO LINES AND GRADES AS SHOWN ON THE PLANS.

NOTES:

1. REFERENCE "GENERAL NOTES" ON SHEET C6.1
2. REFERENCE "ABBREVIATIONS" ON SHEET C6.1
3. REFERENCE "LEGEND" ON SHEET C6.1
4. ADD 4300 TO ALL FINISHED GRADE OR INVERT ELEVATIONS
5. PERMANENT STRIPING, BIKE LANES, AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
6. DISTURBED AREAS TO BE RE-VEGETATED WITH IRRIGATION

CONSTRUCTION NOTES:

1. CONSTRUCT ROCK RETAINING WALL, DESIGN BY OTHERS.

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DRAWN: J.P.B.
DESIGNED: J.P.B.
CHECKED/STAMPED: MATT K. RASMUSSEN, P.E.

PRELIMINARY DESIGN

TECTONICS DESIGN GROUP
10451 Double R Boulevard
Reno, NV 89521
tel 775-624-9888
fax 775-624-9880
www.tcdg-inc.com

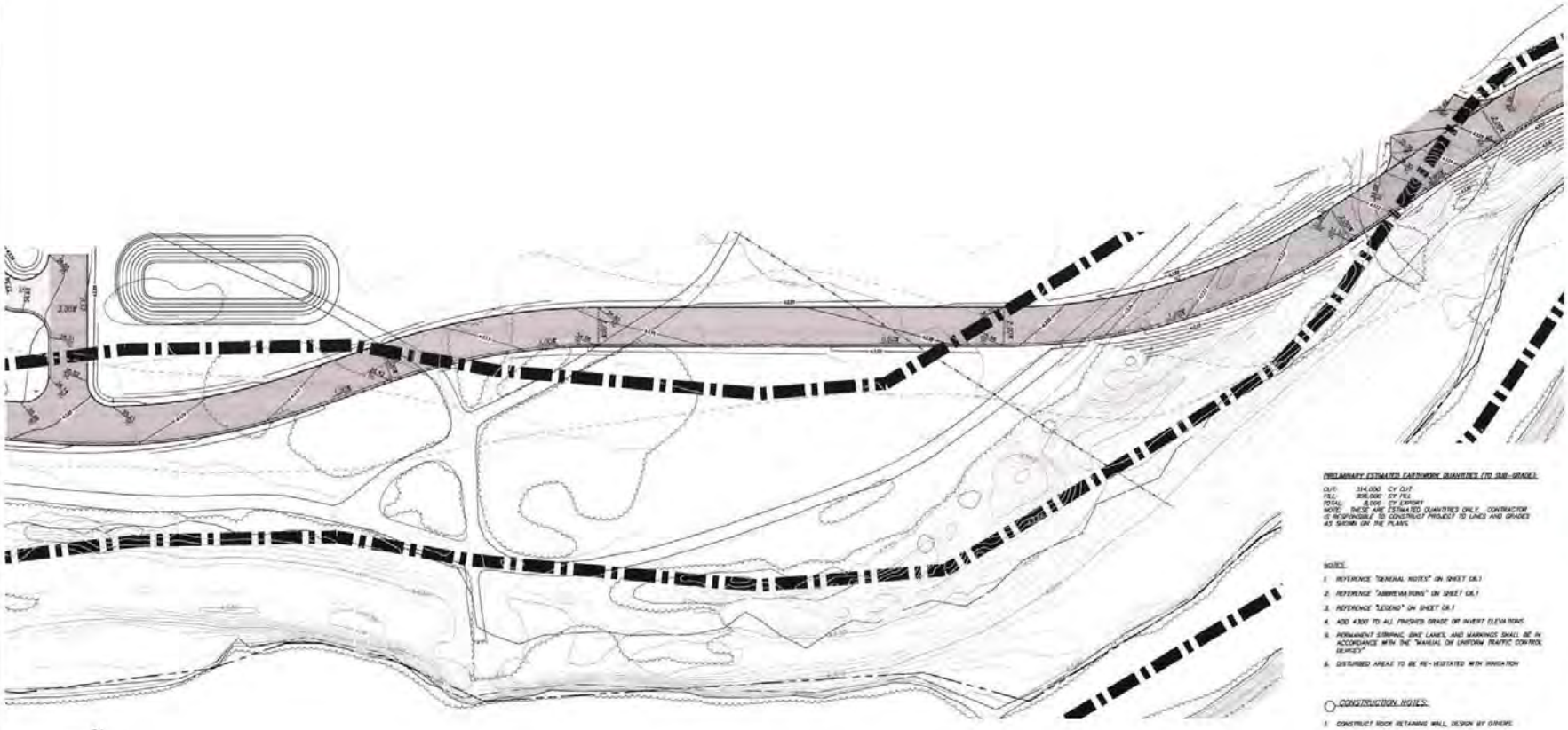
Mustang Industrial Development
McCarren, NV

Scannell Properties
821 Meander Court, Suite 200, Medina, Minnesota 55340

DATE: 09/23/15
SUBMITTAL

GRADING PLAN

C3.4



PRELIMINARY ESTIMATED EARTHWORK QUANTITIES (TO SUB-GRADE)

CUT: 314,000 CY CUT
FILL: 306,000 CY FILL
TOTAL: 8,000 CY EXPORT
NOTE: THESE ARE ESTIMATED QUANTITIES ONLY. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT PROJECT TO LINES AND GRADES AS SHOWN ON THE PLANS.

NOTES:

1. REFERENCE "GENERAL NOTES" ON SHEET C0.1
2. REFERENCE "ABBREVIATIONS" ON SHEET C0.1
3. REFERENCE "LEGEND" ON SHEET C0.1
4. ADD 4,300 TO ALL FINISHED GRADE OR INVERT ELEVATIONS
5. PERMANENT SIGNAGE, BIKE LANES, AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
6. DISTURBED AREAS TO BE RE-VEGETATED WITH IRRIGATION

CONSTRUCTION NOTES:

1. CONSTRUCT ROCK RETAINING WALL, DESIGN BY OTHERS

2 DAYS BEFORE
YOU DIG CALL USA
TOLL FREE 1-800-227-2600

GRADING PLAN
SCALE: 1" = 40'

All Drawings herein are the property of Tectonics Design Group and may not be reproduced or used in any capacity without the written authorization of Tectonics Design Group.

DRAWN: T.P.B.
DESIGNED: T.P.B.
CHECKED/STAMPED: MATT K. MADSEN, P.E.

PRELIMINARY DESIGN

TECTONICS DESIGN GROUP

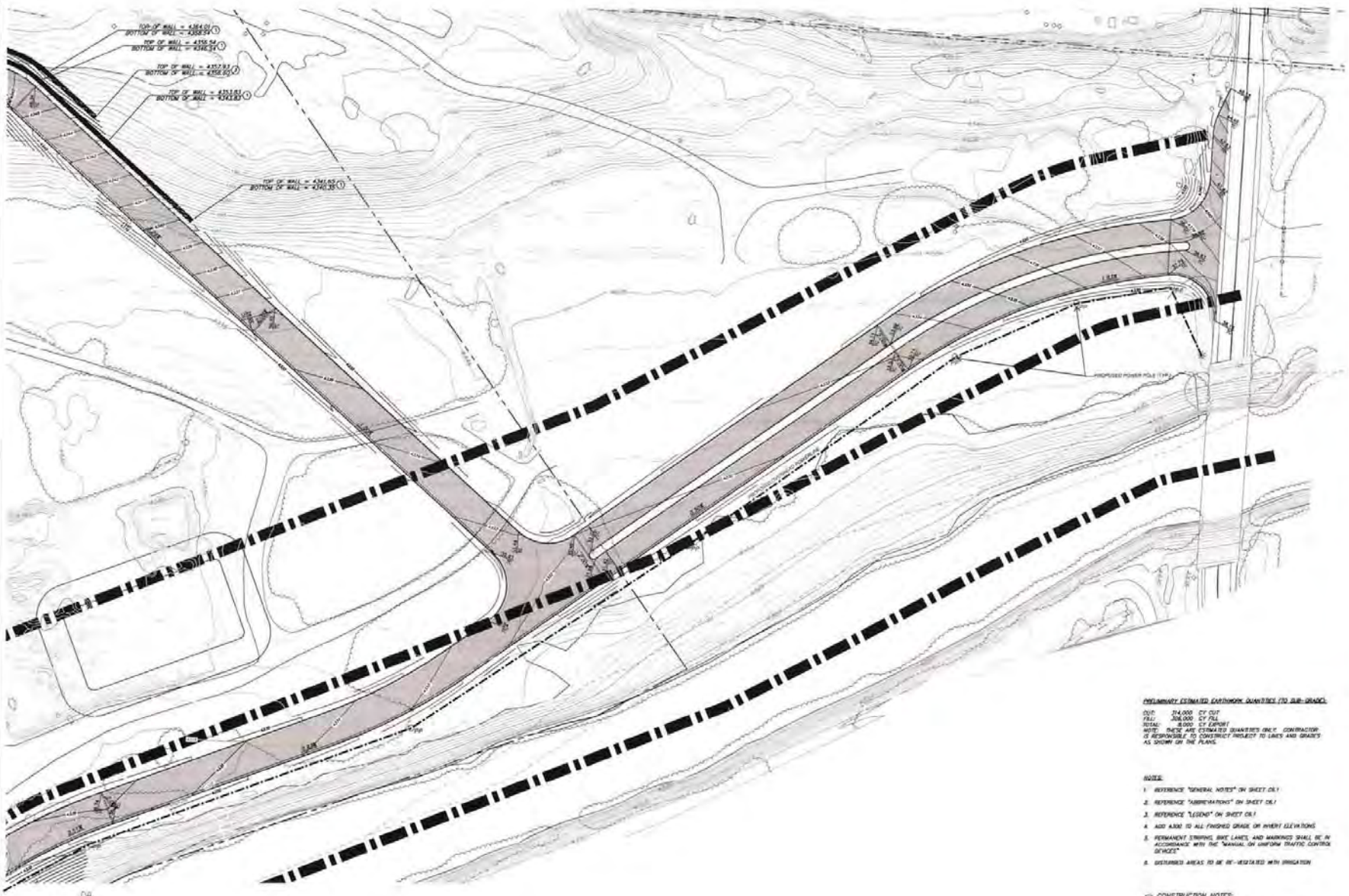
Mustang Industrial Development
McCarren, NV

Scannell Properties
821 Meander Court, Suite 200, Medina, Minnesota 55340

DATE: 10/23/15
SUBMITTAL

GRADING PLAN

C3.5



PRELIMINARY ESTIMATED EARTHWORK QUANTITIES (TO SUB-GRADE)

CUT: 314,000 CY CUT
FILL: 306,000 CY FILL
TOTAL: 8,000 CY EXPORT
NOTE: THESE ARE ESTIMATED QUANTITIES ONLY. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT PROJECT TO LINES AND GRADES AS SHOWN ON THE PLANS.

NOTES:

1. REFERENCE "GENERAL NOTES" ON SHEET C0.1
2. REFERENCE "ABBREVIATIONS" ON SHEET C0.1
3. REFERENCE "LEGEND" ON SHEET C0.1
4. ADD 4.500 TO ALL FINISHED GRADE OR INVERT ELEVATIONS
5. PERMANENT STRIPING, BIKE LANES, AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
6. DISTURBED AREAS TO BE RE-VEGETATED WITH IRRIGATION

CONSTRUCTION NOTES:

1. CONSTRUCT ROCK RETAINING WALL, DESIGN BY OTHERS.

2 DAYS BEFORE
YOU DIG CALL USA
TOLL FREE 1-800-227-2600

GRADING PLAN

SCALE: 1" = 40'

All drawings herein are the property of Tectonics Design Group and may not be reproduced or used in any capacity without this written authorization of Tectonics Design Group.

DRAWN: J.P.S.
DESIGNED: J.P.S.
CHECKED/STAMPED: MATT K. KASHUSSEN, P.E.

PRELIMINARY DESIGN

TECTONICS DESIGN GROUP

Mustang Industrial Development
McCarran, NV

Scannell Properties
821 Meander Court, Suite 200, Medina, Minnesota 55340

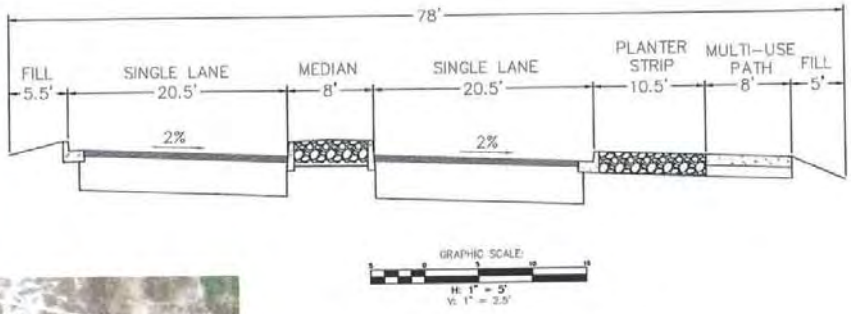
DATE: 09/18/15
SUBMITTAL

GRADING PLAN

C3.6

ATTACHMENT D

Rocky Point Road Plans, by Harris & Associates, dated October 22, 2014



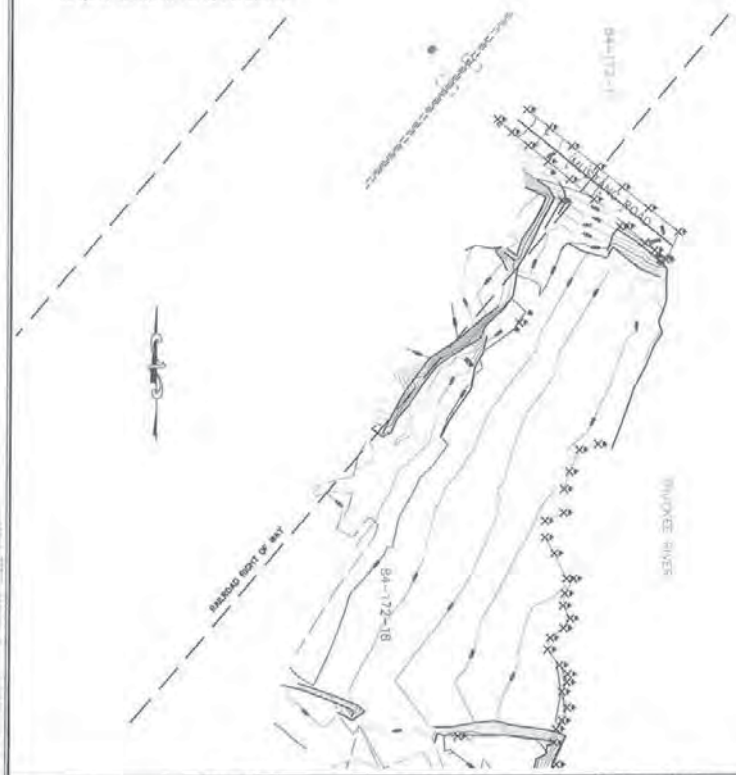
TYPICAL CROSS SECTION

DRAWN BY EA DESIGNED BY KWM CHECKED BY PB	DATE ISSUED 10/22/14	Harris & Associates 1401 Willow Pass Rd. Ste. 500, Concord CA 94520 harris-assoc.com (925) 827-4900	WASHOE COUNTY, NEVADA ROCKY POINT ROAD	BLM RIGHT-OF-WAY APPLICATION	DRAWING NO. C-1 SHEET 1 OF 1

WASHOE COUNTY, NEVADA
ROCKY POINT ROAD

TOPOGRAPHIC / AS-BUILT SURVEY

A PORTION OF ASSESSOR'S PARCEL NUMBER 084-172-18
NW 1/4 OF SECTION 15, T.19 N., R.21 E., M.D.M.



ABBREVIATIONS

℄	CENTERLINE
ELEV	ELEVATION
L	LEFT
MTC	MEDIAN TOP OF CURB
OFF	OFFSET
R	RIGHT
RCP	REINFORCED CONCRETE PIPE
SDIS	STORM DRAIN DRAINAGE INLET
STA	STATION
TC	TOP OF CURB

LIST OF DRAWINGS

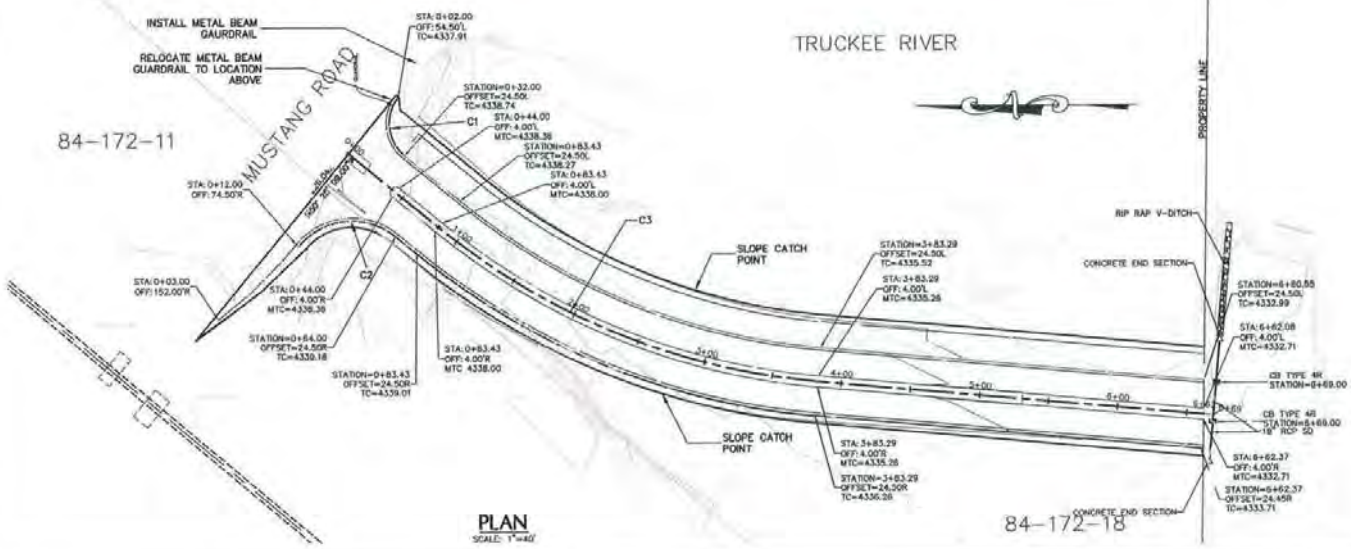
SHEET NO.	TITLE	DESCRIPTION
1	T-01	TITLE SHEET
2	PP-01	PLAN AND PROFILE
3	SS-01	SIGNING AND STRIPING PLAN
4	D-01	CONSTRUCTION DETAILS
5	D-02	CROSS SECTION DETAIL
6	X-01	CROSS-SECTIONS
7	X-02	CROSS-SECTIONS
8	X-03	CROSS-SECTIONS

LEGEND

○	SET 5/8" REBAR "PLS 10042"
●	FOUND 5/8" REBAR "PLS 4043" OR AS NOTED
	CATCH BASIN
	DROP INLET
	ELECTRICAL BOX
	FIRE HYDRANT
	LIGHT POLE
	POWER POLE
	POWER POLE WITH RISER
	SEWER CLEAN OUT
	STORM DRAIN MANHOLE
	SEWER MANHOLE
	SIGN
	WATER METER
	WATER VALVE
	UNDERGROUND UTILITY MARK
	GAS VALVE
	SEE REFERENCE NUMBER
	TEST PIT
	ROCK MULCH

VICINITY MAP
N.T.S.

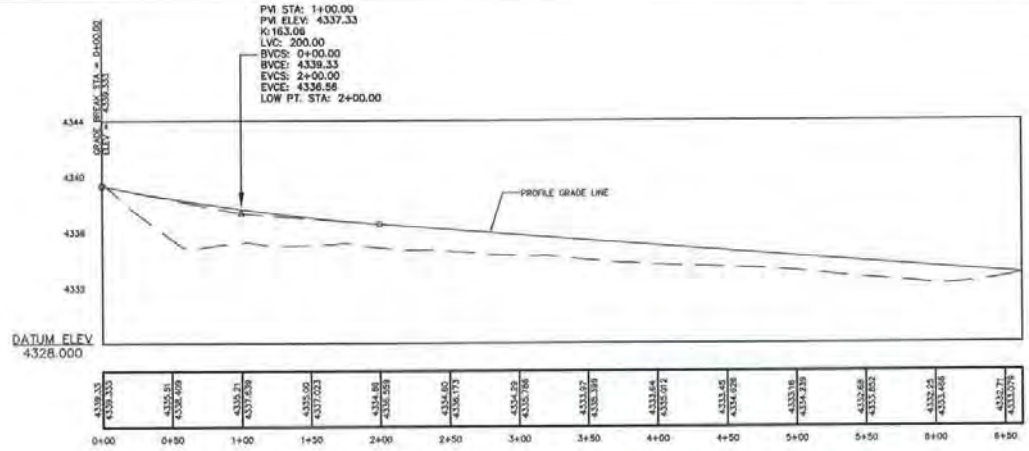
JPN / EA / RAM	10/22/14	Harris & Associates	WASHOE COUNTY, NEVADA ROCKY POINT ROAD	TITLE SHEET	T-01 SHEET 1 OF 8



PLAN

SCALE: 1"=40'

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	47.12	30.00	90.00	S84° 31' 51"W	42.43
C2	78.54	50.00	90.00	N5° 28' 09"W	70.71
C3	302.26	504.00	34.36	S22° 31' 00"W	297.75



PROFILE

SCALE: 1"=40'

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF THE ENGINEER AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY WRITTEN AGREEMENT WITH THE ENGINEER. WRITTEN DIMENSIONS SHALL ONLY PREVAIL. DO NOT SCALE DRAWINGS AND FIELD DIMENSIONS SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER PRIOR TO THE START OF ANY WORK.

NO.	DATE	BY	REVISION

DRAWN BY JPN
DESIGNED BY EA
CHECKED BY RAM

DATE ISSUED: 10/22/14
JOB NO.

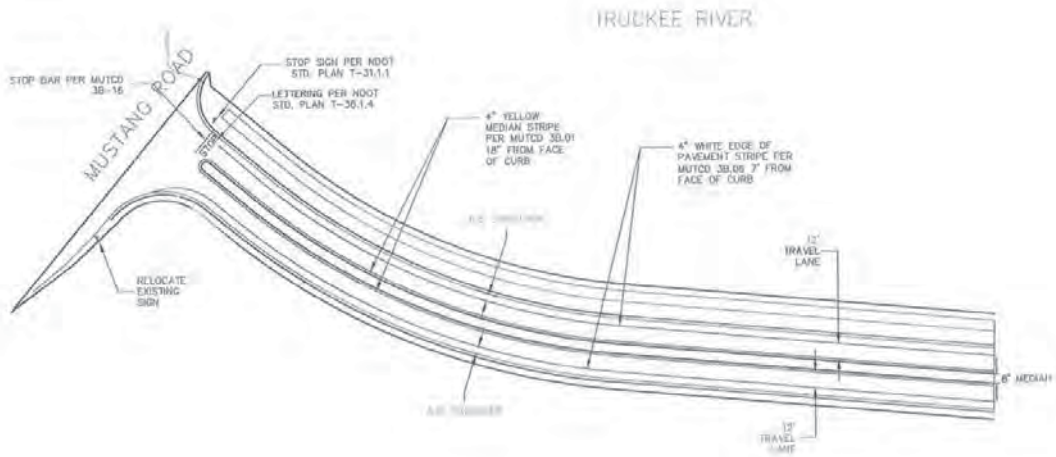
Harris & Associates
1401 Willow Pass Rd. Ste. 500, Concord CA 94520
harris-assoc.com (925) 827-4900

WASHOE COUNTY, NEVADA
ROCKY POINT ROAD

PLAN AND PROFILE

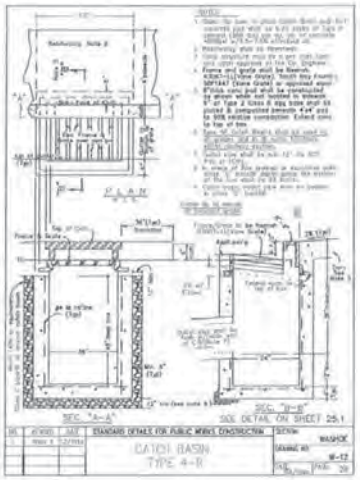
DRAWING NO.: PP-01
SHEET 2 OF 8

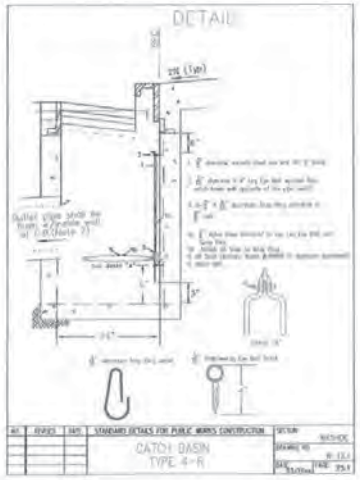
H:\ROCKY POINT\ PP-01 06/24/13 16:09 acrobatar PAGES: X-ZIP-N, X-TOPO, X-SITE, X-PP, X-SURFACE

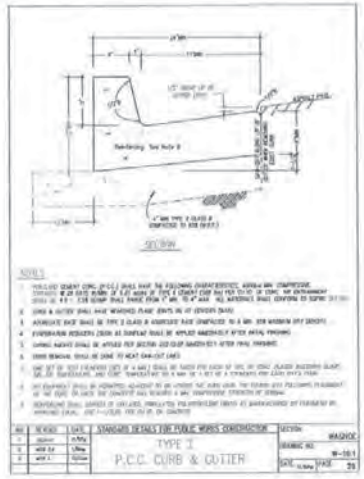


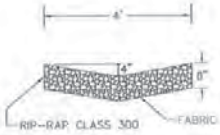
PLAN

				JPN / RAM	10/22/14	Harris & Associates	WASHOE COUNTY, NEVADA ROCKY POINT ROAD	SIGNING AND STRIPING PLAN	SS-01 SHEET 3 OF 8





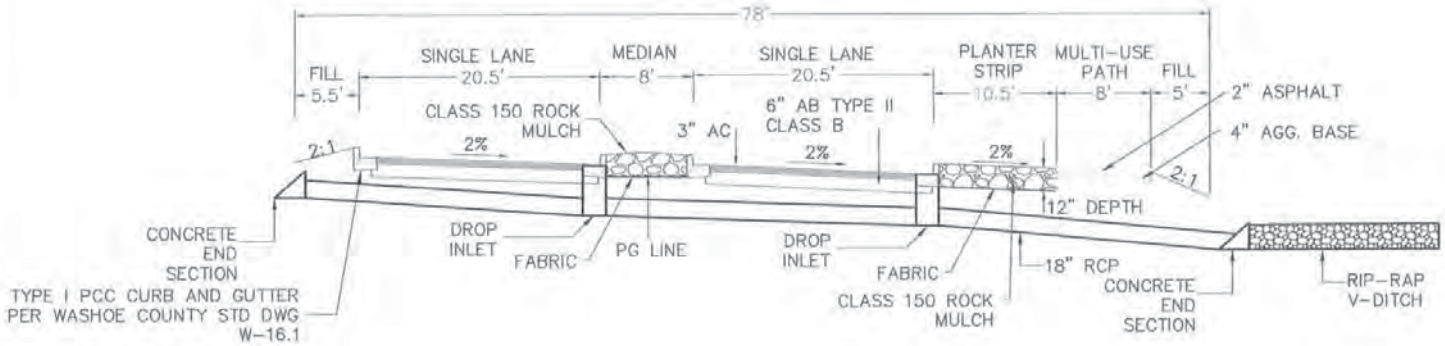




RIP-RAP V-DITCH

SCALE: NOT TO SCALE

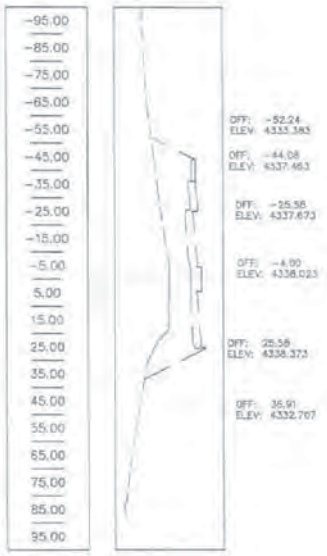
				JPN CA RAM	10/22/14	Harris & Associates 1401 Willow Pass Rd. Ste. 800, Concord CA 94520 harrisassoc.com (925) 527-4300	WASHOE COUNTY, NEVADA ROCKY POINT ROAD	CONSTRUCTION DETAILS	D-01 SHEET 4 OF 8

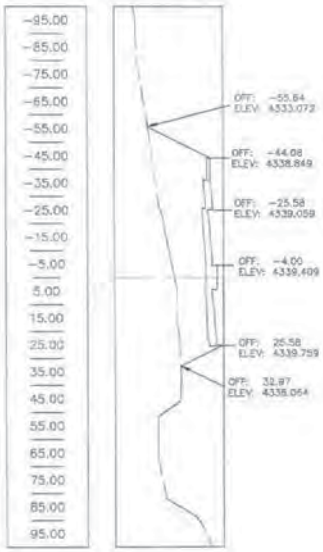


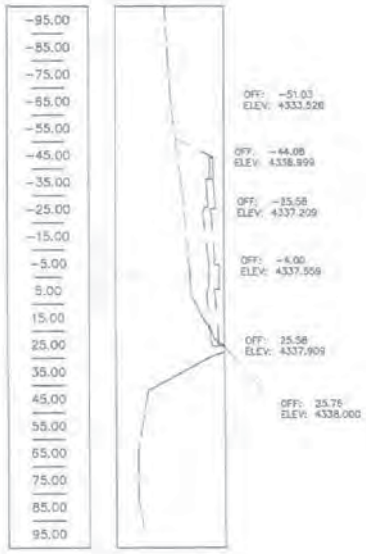
TYPICAL CROSS-SECTION

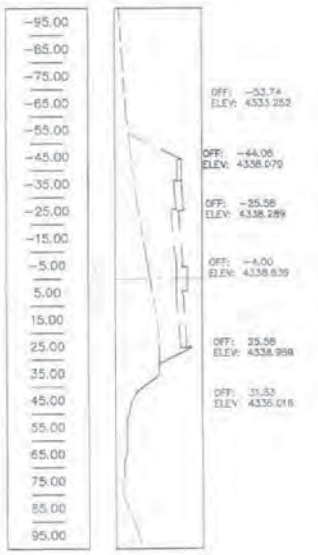
SCALE: NOT TO SCALE

				RAM	10/22/14	Harris & Associates	WASHOE COUNTY, NEVADA ROCKY POINT ROAD	CONSTRUCTION DETAILS	D-02 SHEET 5 OF 8









Harris & Associates

WASHOE COUNTY, NEVADA
ROCKY POINT ROAD

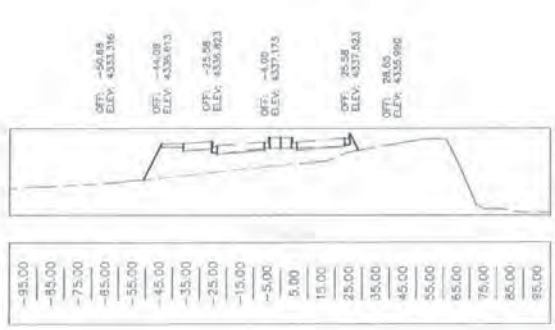
CROSS-SECTIONS

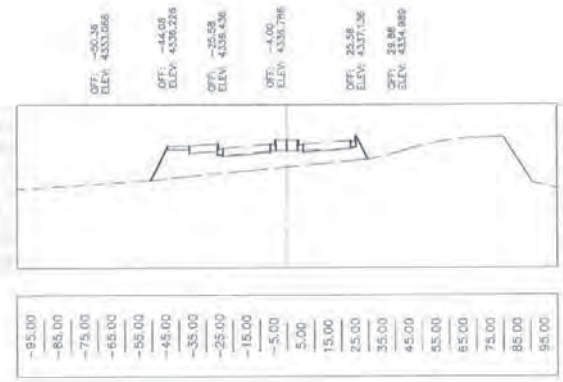
X-01

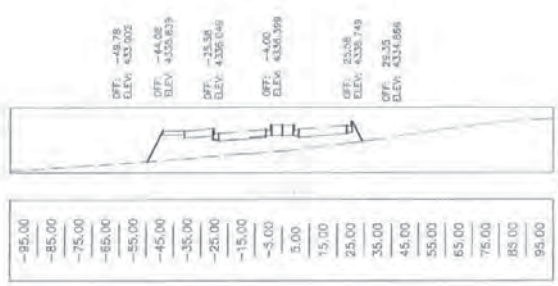
SHEET 6 OF 8

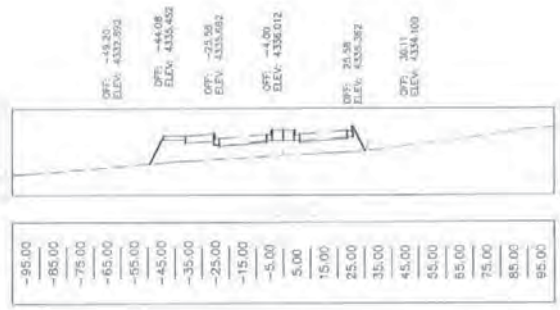
10/22/14

RAM



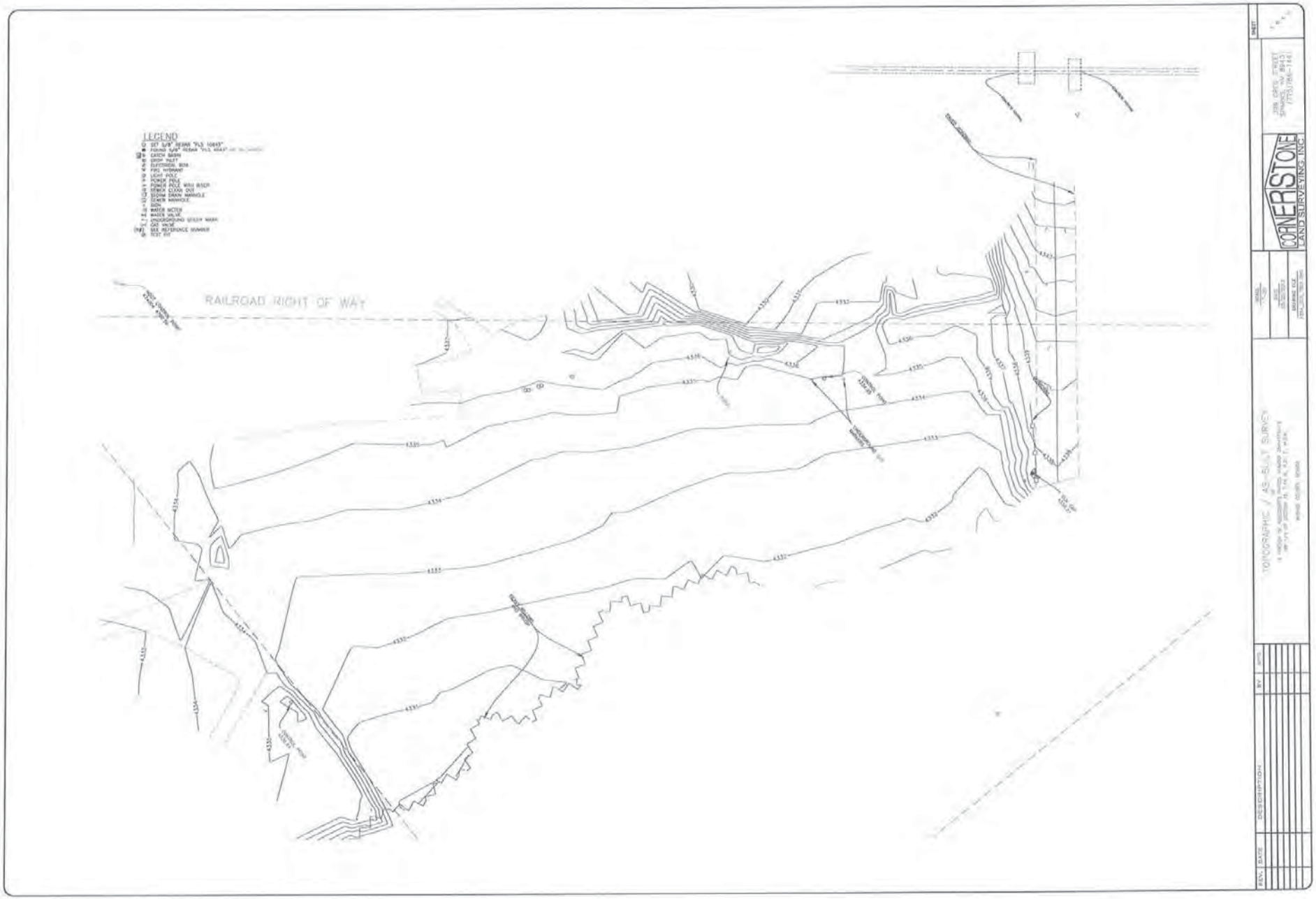






				10/22/14	Harris & Associates	WASHOE COUNTY, NEVADA ROCKY POINT ROAD	CROSS-SECTIONS	X-02 SHEET 7 OF 8

-95.00
-85.00
-75.00
-65.00
-55.00
-45.00
-35.00
-25.00
-15.00
-5.00
5.00
15.00
25.00
35.00
45.00
55.00
65.00
75.00
85.00
95.00
OFF: -49.14
ELEV: 4332.318
OFF: -44.08
ELEV: 4336.088
OFF: -23.58
ELEV: 4336.278
OFF: -4.00
ELEV: 4335.826
OFF: 23.58
ELEV: 4335.976
OFF: 29.73
ELEV: 4333.902
OFF: -49.24
ELEV: 4331.712
OFF: -44.08
ELEV: 4334.282
OFF: -23.58
ELEV: 4334.502
OFF: -4.00
ELEV: 4334.852
OFF: 23.58
ELEV: 4335.202
OFF: 29.63
ELEV: 4333.178
OFF: -49.88
ELEV: 4331.506
OFF: -44.08
ELEV: 4335.906
OFF: -23.58
ELEV: 4334.116
OFF: -4.00
ELEV: 4334.466
OFF: 23.58
ELEV: 4334.816
OFF: 29.78
ELEV: 4332.730
OFF: -47.28
ELEV: 4331.928
OFF: -44.08
ELEV: 4333.319
OFF: -23.58
ELEV: 4333.728
OFF: -4.00
ELEV: 4334.079
OFF: 23.58
ELEV: 4334.428
OFF: 29.13
ELEV: 4333.156
SCALE: 1"=20'
OFF: -49.31
ELEV: 4332.066
OFF: -44.08
ELEV: 4334.678
OFF: -23.58
ELEV: 4334.888
OFF: -4.00
ELEV: 4335.238
OFF: 23.58
ELEV: 4335.588
OFF: 29.49
ELEV: 4333.642
X-03
SHEET 8 OF 8
CROSS-SECTIONS
WASHOE COUNTY, NEVADA
ROCKY POINT ROAD
Harris & Associates
10/22/14
RAM

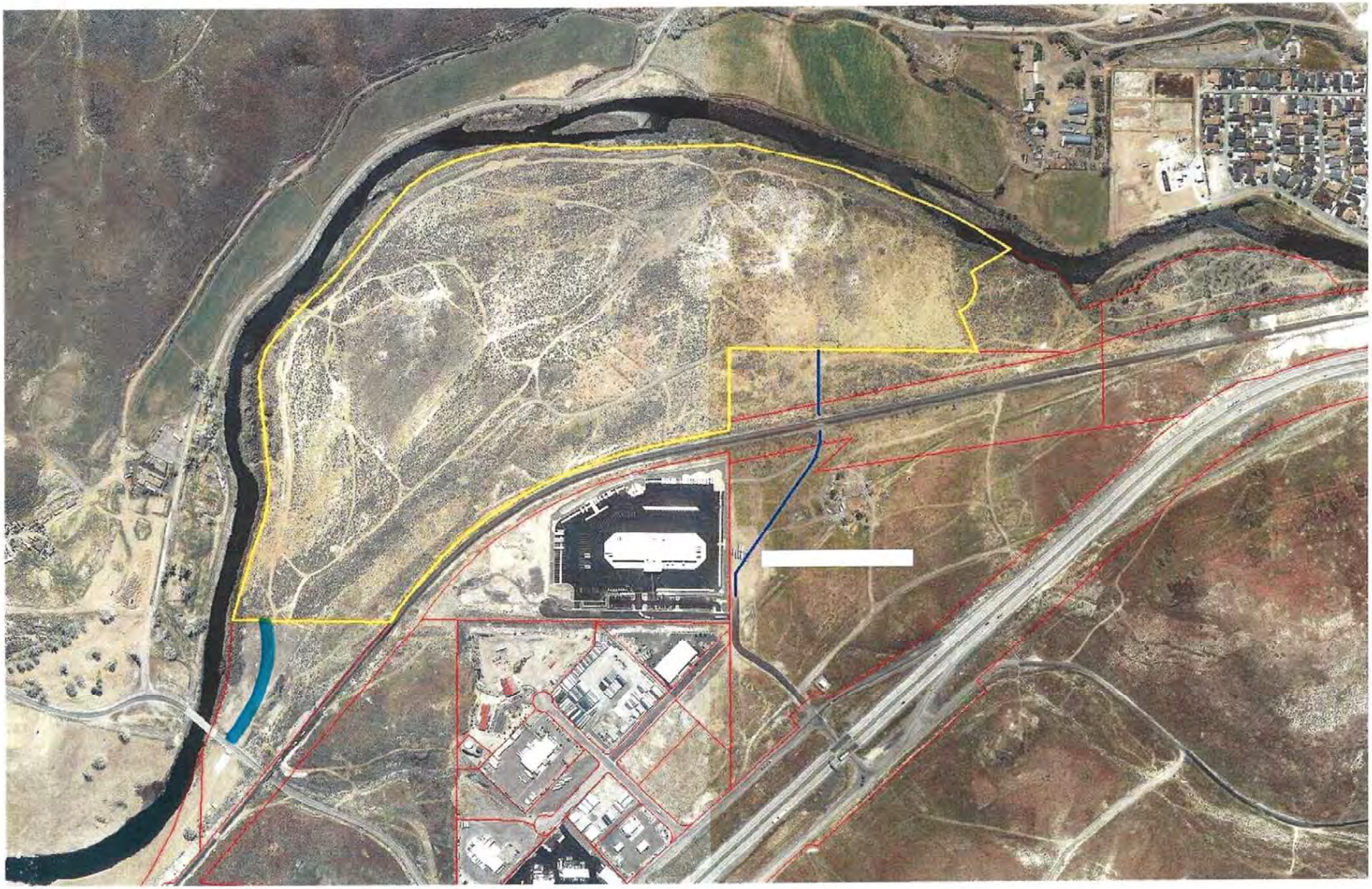

LEGEND
RAILROAD RIGHT OF WAY
CORNERSTONE
LAND SURVEYING INC.
TOPOGRAPHIC / AS-BUILT SURVEY
REV. DATE DESCRIPTION BY APPD.

Harris - Hafed Roadway

Copyright 2007 Washoe County GIS
1001 East Ninth St. Reno, Nv 89511

DISCLAIMER : This is a product of the Washoe County GIS Program. The data depicted here have been developed with extensive cooperation from other county departments, as well as other federal, state and local government agencies. Washoe County expressly disclaims responsibility for damages or liability that may arise from the use of this map.

PROPRIETARY INFORMATION: Any resale of this information is prohibited, except in accordance with a licensing agreement.



ATTACHMENT E

Washoe County Board of Adjustment Action Order for Special Use Permit Number SB-15-001, dated April 7, 2015

Board of Adjustment Action Order

Special Use Permit Number SB15-001

Decision:	Approved with Conditions
Decision Date:	April 2, 2015
Mailing/Filing Date:	April 7, 2015
Applicant:	Scannell Properties Attn: Dan Salzer 800 East 96th Street, Suite 175 Indianapolis, IN 46240
Property Owner:	Hiatt Land and Development Company Attn: Bart Hiatt 515 Windmill Drive Fallon, NV 89406
Assigned Planner:	Roger D. Pelham, MPA, Senior Planner Planning and Development Division Washoe County Community Services Department
Phone:	775.328.3622
E-Mail:	rpelham@washoecounty.us

Special Use Permit Case Number SB15-001 (Mustang Industrial Grading) – To allow the grading of approximately 81 acres and excavation of a total of approximately 355,417 cubic yards of earth in preparation of construction of two industrial buildings and associated driveways and parking areas.

- Location: South of Mustang Road, between the railroad tracks and the Truckee River
- Assessor's Parcel Number: 084-370-02
- Parcel Size: ±117.76 acres
- Master Plan Category: Industrial (I)
- Regulatory Zone: Industrial (I)
- Area Plan: Truckee Canyon
- Citizen Advisory Board: East Truckee Canyon
- Development Code: Authorized in Article 438, Grading
- Commission District: 4 – Commissioner Hartung
- Section/Township/Range: Section 15 and 16, T19N, R21E, MDM, Washoe County, NV

Notice is hereby given that the Washoe County Board of Adjustment granted approval with conditions of the above referenced case number based on the findings in accordance with Washoe County Development Code Article 810, Special Use Permit. If no appeals have been filed within 10 days after the date of decision, the approval by the Washoe County Board of Adjustment is final. If filed, an appeal stays any further action on the permit until final resolution of the appeal. If the end of the appeal period falls on a non-business day, the appeal period shall be extended to include the next business day. An appeal shall be filed in accordance with the provisions found in Article 810 of the Washoe County Development Code.

1. Consistency. That the proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the Truckee Canyon Area Plan;
2. Improvements. That adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;
3. Site Suitability. That the site is physically suitable for grading to accommodate an industrial development, and for the intensity of such a development;
4. Issuance Not Detrimental. That issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area;
5. Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

This Action Order of approval is granted subject to the attached conditions and Washoe County development standards. Please contact the planner assigned to your project at the above-referenced phone number within 7 days of receipt of this Order to review the steps necessary to satisfy the Conditions of Approval. A business license, certificate of occupancy or final approval shall not be issued until all of the Conditions of Approval (attached) are satisfied. Additionally, compliance shall be required with all federal, state and local statutes, ordinances and regulations applicable to the approved project.

This Action Order does not authorize grading or building without issuance of the necessary permits from the Washoe County Building and Safety Department

Washoe County
Planning and Development

for Carl Webb
William Whitney
Secretary to the Board of Adjustment

WW/RP/df

Attachments: Conditions of Approval

Applicant: Scannell Properties
Attn: Dan Salzer
800 East 96th Street, Suite 175
Indianapolis, IN 46240

Property Owner: Hiatt Land and Development Company
Attn: Bart Hiatt
515 Windmill Drive
Fallon, NV 89406

Action Order xc: Nate Edwards , Esq., District Attorney's Office; Carol Buonanoma, Assessor's Office (CAAS); Josh Wilson, Assessor's Office; Tim Simpson; CSD – Utilities Division, Leo Vesely, Engineering Division; Amy Ray, Truckee Meadows Fire Protection District; Nevada Division of Environmental Protection, 901 South Stewart Street, Suite. 4001, Carson City, NV 89701-5249; Regional Transportation Commission, Attn: Patrice Echola; East Truckee Canyon Citizen Advisory Board, Chair.

ATTACHMENT F

Washoe County Conditions of Approval for Special User Permit Number SB15-001, dated April 2, 2015

Conditions of Approval

Special Use Permit Case Number SB15-001

The project approved under Special Use Permit Case Number SB15-001 shall be carried out in accordance with the Conditions of Approval granted by the Board of Adjustment on April 2, 2015. Conditions of Approval are requirements placed on a permit or development by each reviewing agency. These Conditions of Approval may require submittal of documents, applications, fees, inspections, amendments to plans, and more. These conditions do not relieve the applicant of the obligation to obtain any other approvals and licenses from relevant authorities required under any other act or to abide by all other generally applicable Codes.

Unless otherwise specified, all conditions related to the approval of this Special Use Permit shall be met or financial assurance must be provided to satisfy the Conditions of Approval prior to issuance of a grading or building permit. The agency responsible for determining compliance with a specific condition shall determine whether the condition must be fully completed or whether the applicant shall be offered the option of providing financial assurance. All agreements, easements, or other documentation required by these conditions shall have a copy filed with the County Engineer and the Planning and Development Division.

Compliance with the Conditions of Approval related to this Special Use Permit is the responsibility of the applicant, his/her successor in interest, and all owners, assignees, and occupants of the property and their successors in interest. Failure to comply with any of the conditions imposed in the approval of the Special Use Permit may result in the initiation of revocation procedures.

Operational Conditions are subject to review by the Planning & Development Division prior to the renewal of a business license each year. Failure to adhere to the Operational Conditions may result in the Planning and Development Division recommending that the business license not be renewed until conditions are complied with to the satisfaction of Washoe County.

Washoe County reserves the right to review and revise the Conditions of Approval related to this Special Use Permit should it be determined that a subsequent license or permit issued by Washoe County violates the intent of this approval.

For the purpose of conditions imposed by Washoe County, "may" is permissive and "shall" or "must" is mandatory.

Conditions of Approval are usually complied with at different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i.e., grading permits, building permits, etc.).
- Prior to obtaining a final inspection and/or a certificate of occupancy.
- Prior to the issuance of a business license or other permits/licenses.
- Some "Conditions of Approval" are referred to as "Operational Conditions." These conditions must be continually complied with for the life of the project or business.

The Washoe County Commission oversees many of the reviewing agencies/departments with the exception of the following agencies.

- **The DISTRICT BOARD OF HEALTH, through the Washoe County Health District, has jurisdiction over all public health matters in the Health District. Any conditions set by the Washoe County Health District must be appealed to the District Board of Health.**

FOLLOWING ARE CONDITIONS OF APPROVAL REQUIRED BY THE REVIEWING AGENCIES. EACH CONDITION MUST BE MET TO THE SATISFACTION OF THE ISSUING AGENCY.

Washoe County Planning and Development Division

1. The following conditions are requirements of the Planning and Development Division, which shall be responsible for determining compliance with these conditions.

   Contact Name – Roger Pelham, 775.328.3622, rpelham@washoecouty.us

   a. The applicant shall demonstrate substantial conformance to the plans approved as part of this special use permit. The Planning and Development Division shall determine compliance with this condition.

   b. The applicant shall submit complete construction plans and building permits shall be issued not later than April 2, 2017. Failure to obtain all necessary permits by April 2, 2017 shall result in this approval being null and void. The applicant shall complete construction within the time specified by the building permits. Compliance with this condition shall be determined by the Planning and Development Division.

   c. The applicant shall attach a copy of the action order approving this project to all administrative permit applications (including building permits) applied for as part of this special use permit.

   d. Temporary construction fencing shall be installed at the limits of grading as shown on the approved plans, prior to commencement of grading activity to prevent disturbance in areas shown on the plans to remain undisturbed.

   e. All materials (such as gravel, concrete, soil and other dumped items) not suitable for use as cut-and-fill material shall be removed from the project site to a location approved by Washoe County.

   f. The applicant shall clean up and remove all trash and debris from the area proposed for landscaping and walking path between the proposed driveway and the river.

   g. All disturbed areas shall be stabilized such that there shall be no run-off into the Truckee River, and such that dust is controlled on site.

   h. Prior to issuance of a grading permit the applicant shall submit a water quality report meeting all requirements of Development Code section 110.222(d), for approval by Washoe County.

i. A note shall be placed on all construction drawings and grading plans stating:

NOTE

Should any prehistoric or historic remains/artifacts be discovered during site development, work shall temporarily be halted at the specific site and the State Historic Preservation Office of the Department of Museums, Library and Arts shall be notified to record and photograph the site. The period of temporary delay shall be limited to a maximum of two (2) working days from the date of notification.

j. Boulders unearthed during grading shall be placed on all cut and fill slopes to help stabilize the slopes and to help create a more natural appearance.

k. The color of all retaining walls on the subject site shall match the color of the surrounding undisturbed geology. Retaining walls constructed of imported rock material and retaining walls constructed of concrete shall be stained with a permanent simulated desert varnish / stain product. Retaining walls constructed of boulders native to the subject site do not require stain.

l. The graded slope at section "A-A" on sheet C3.1 of the revised plans, shall not be constructed within ten feet of the property line. The slope at that location may be constructed at a slope of 2H:1V with the approval of the County Engineer in accordance with Section 438.45(a)(4) of the Development Code.

m. Prior to issuance of a grading permit the applicant shall supply an analysis to the Director of Planning and Development sufficient to determine whether the subsequent industrial development will exceed any of the following thresholds:

- Employment by not fewer than 938 employees;
- Housing by not fewer than 625 units;
- Hotel accommodations by not fewer than 625 rooms;
- Sewage by not less than 187,500 gallons per day;
- Water usage by not less than 625 acre feet per year; or
- Traffic by not less than an average of 6,250 trips daily.

If any of these thresholds are exceeded then an application for review of a Project of Regional Significance (PRS) is required.

n. The following **Operational Conditions** shall be required for the life of the project/business/development:

1. This special use permit shall remain in effect until or unless it is revoked or is inactive for one year.

2. Failure to comply with the Conditions of Approval shall render this approval null and void. Compliance with this condition shall be determined by the Planning and Development Division.

3. The applicant and any successors shall direct any potential purchaser/operator of the site and/or the special use permit to meet with the Planning and Development Division to review Conditions of Approval prior to the final sale of the site and/or the special use permit. Any subsequent

purchaser/operator of the site and/or the special use permit shall notify the Planning and Development Division of the name, address, telephone number, and contact person of the new purchaser/operator within 30 days of the final sale.

Washoe County Engineering and Capital Projects

2. The following conditions are requirements of the Engineering and Capital Projects Division, which shall be responsible for determining compliance with these conditions.

Contact Name – Leo Vesely, 775.325.8032, lvesely@washoecounty.us

a. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted when applying for a building/grading permit. Grading shall comply with best management practices (BMP's) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), slope stabilization, and mosquito abatement. Placement or removal of any excavated materials shall be indicated on the grading plan. All grading shall comply with County Code Article 438, Grading Standards. Silts shall be controlled on-site and not allowed onto adjacent property.

b. The owner/developer shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit for construction and submit a copy to the Engineering Division prior to issuance of a grading permit.

c. The owner/applicant shall complete and submit the Construction Permit Submittal Checklist, the Performance Standards Compliance Checklist prior to obtaining a grading/building permit. The County Engineer shall determine compliance with this condition.

d. A grading bond of $2,000/acre of disturbed area shall be provided to the Engineering Division prior to any grading.

e. If the import or export of materials is required, the applicant shall indicate on the plans where the exported material will be taken or where the imported material will be coming from, and a grading permit shall be obtained for the import/export site.

f. Cross-sections indicating cuts and fills shall be submitted when applying for a grading permit. Estimated total volumes and area of disturbance shall be indicated.

g. Per the development code, all on site roadway improvements necessary to serve the project shall be designed and constructed to County standards and specifications to the satisfaction of the County Engineer.

h. A secondary emergency access or approved alternative shall be provided prior to the issuance of a Certificate of Occupancy on the first structure.

i. A detailed traffic report shall be prepared by a registered engineer and shall address driveway locations and turning movements for truck patterns and movements, and provide recommendations on acceleration/deceleration lanes, storage lanes, and access control. The County Engineer shall be responsible for

determining compliance with this condition and the traffic improvements that are required.

j. Driveway location shall conform to BLM/ Bureau of Reclamation requirements and Washoe County Code Article 436 for commercial driveways.

k. An access easement, from the BLM/ Bureau of Reclamation and approval from Storey County shall be obtained for access through BLM/ Bureau of Reclamation properties and for any necessary improvements to the existing roadway. Copies of approvals, easements and permits shall be provided to the Engineering Division.

l. Applicant/owner shall enter into a maintenance agreement with Storey County for the maintenance of Mustang Road.

m. A hydrology/hydraulic report prepared by a registered engineer shall be submitted to the Engineering Division for review and approval. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm drain pipe and ditch sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.

n. The FEMA 100-year floodplain shall appear on the site plan to the satisfaction of the County Engineer. Building permits for structures and fill in these areas shall be in conformance with the Washoe County Code Article 416.

o. No work within the FEMA floodway area will be allowed without specific approval from FEMA.

p. Washoe County will only maintain drainage easements which are at least 15 feet wide and piped to the satisfaction of the County Engineer.

q. The applicant/owner shall provide pretreatment for petrochemicals and silt for all storm drainage from the site to the satisfaction of the County Engineer.

r. All regulatory traffic signs shall meet County standards and the Manual on Uniform Traffic Control Devices.

s. Although the SUP for the grading does not require emergency access to the site, the proposed buildings will require approved emergency access to the site per Washoe County Development Code.

t. Provide approval from BLM on the permitted use of Mustang Road and any improvements that may be required to the road surface for grading operations and the ultimate build out of the site. At a minimum, Washoe County Development Code for industrial developments will be required for the roads and right of ways to the site.

u. Provide recorded documentation of access over BLM parcel 84-172-18 from Mustang Road to the site which meets Washoe County Development Code.

Truckee Meadows Fire Protection District

3. The following conditions are requirements of the Truckee Meadows Fire Protection District, which shall be responsible for determining compliance with these conditions.

Contact Name – Amy Ray (775) 326-6005, aray@tmfpd.us

a. The Truckee Meadows Fire Protection District (TMFPD) will require that this project meet the requirements of Washoe County Code 60 to include infrastructure, access, and water for fire suppression.

Nevada Department of Transportation

4. The following conditions are requirements of the Nevada Department of Transportation, which shall be responsible for determining compliance with these conditions.

Contact Name – Anita Lyday (775)834-8320, alyday@dot.state.nv.us

a. Prior to any grading adjacent to the Nevada Department of Transportation right-of-way, a Drainage Report, including a grading plan, and a Drainage Form must be submitted to the Permit office for review and acceptance. A Drainage Information Form is attached. Please contact the Permit Office at (775) 834-8330 for more information.

b. The Nevada Department of Transportation (NDOT) will require an occupancy permit for any work performed within the State's right-of-way. Please contact the Permit Office at (775) 834-8330 for more information regarding the occupancy permit.

c. Existing approaches are personal and not transferable with the sale of property. All driveway accesses to the state highway system will be required to comply with the NDOT access management guidelines current at the time of application.

d. The proposed development could have significant impact to FRWA10, 11, 12 and I-80 Mustang Interchange. NDOT currently does not have plans to upgrade this roadway. NDOT suggests consideration of any potential impacts to the roadway and any required mitigation. Any required mitigation will require a permanent encroachment permit and appropriate coordination with NDOT District II Permit staff at (775)834-8330.

e. The applicant may be required to provide a Traffic Study to determine the impacts of this development to the state highway system and any required mitigation strategies. Developer is encouraged to coordinate traffic study review and seek NDOT traffic study approval early in the development planning process.

f. Any truck haul operations to access the state highway system will require a temporary permit and coordination with NDOT District Permit staff at (775)834-8330.

g. Turning exhibits for the design vehicle will be required as part of NDOT permit process. NDOT typically requires the design to accommodate a WB-67 design vehicle.

h. The state defers to the local municipal government agency for land use development decisions. Public involvement for development related

improvements within the NDOT right-of-way should be considered during the municipal land use development public involvement process. Significant public improvements within the NDOT right-of-way, developed after the public involvement process, may require additional public involvement. It is the responsibility of the permit applicant to perform such additional public involvement. We would encourage such public involvement to be part of a municipal land use development process.

Washoe County Health District

5. The following conditions are requirements of the Health District, which shall be responsible for determining compliance with these conditions. The District Board of Health has jurisdiction over all public health matters in the Health District. Any conditions set by the Health District must be appealed to the District Board of Health.

   Contact Name – Jim Shaffer, 775.785.4599, jshaffer@washoecounty.us

   a. Any new private catch basins will require a water quality insert placed within all basins to improve water quality downstream and prevent mosquitoes from colonizing this infrastructure (040.013).

   b. The detention basins will require our standard design of a cobble rock lined low flow channel, one foot deep and 2-3 feet wide connecting the inlet(s) to the outlet pipe. In addition, we will require over excavating below the low flow channel with a cobble lined infiltration trench design 2 feet wide and 3 feet deep the length of the basins to reduce the downstream effects of storm water runoff (040.023).

   c. If vegetation is planted in the detention basins, no planting shall occur within one foot on either side of the low flow channel. The following maintenance language shall be noted on the civil plans," all vegetation, debris and blockages shall require removal in the low flow channel including one foot on either side of the channel on an annual basis. The maintenance will mitigate insect development by preventing standing water from ponding longer than 7 days" (040.022).

   d. District Health shall require all voids in the slope stabilization filled to a depth of 3-4 inches with mixed aggregate D size rock 3/4 inch to 1 1/2 inches in range (040.0865).

   e. In the design of rockery walls, voids shall be filled by placing smaller rock within the face of the rock wall for the entire height of the wall (040.081).

   f. Prior to the sign off of the building plans the above detail designs are required on the plans and a scheduled compliance inspection is required for the above condition(s).

United States Army Corps of Engineers

6. The following conditions are requirements of the United States Army Corps of Engineers, which shall be responsible for determining compliance with these conditions.

Contact Name – Kristine Hansen, 775.784-5304, Kristine.S.Hansen@usace.army.mil

a. It is recommended that the applicant complete a delineation of waters of the U.S. to include wetlands for the proposed project site. Due to the proximity of the Truckee River there is potential for wetlands to be present.

Washoe-Storey Conservation District

7. The following conditions are requirements of the Washoe-Storey Conservation District, which shall be responsible for determining compliance with these conditions.

Contact Name – Kevin J. Roukey, 775-232-1571, kevinjr_51@att.net

a. The proposed project is located within a designated FEMA Flood Zone and there is no mention of this on the entire application other than an aerial photo showing the area. There is no mention of the applicant's mitigation measures to stay out of the flood zone or prevent flooding of the facilities. Of primary concern is the potential of the proposed sanitary sewer line which traverses the length of the properties along the river's high water line back to the septic tanks and leach fields.

b. Item 10 – In response to Item 10 the applicant states that once the grading activities have been completed that all disturbed 3:1 slope be treated with 6-12" rip-rap for erosion protection. We would recommend that the County condition the permit to have these areas be stabilized with bio-engineering methods reviewed by the Natural Resources Conservation Service (NRCS).

c. Item 15 – In response to Item 15 regarding the type of seed mix to be used the applicant responded ..."A native grass and shrub mix per site specific seed mix by Comstock Seed Company will be broadcast at approx. rate of 20lbs/ac and lightly chain dragged. A tackifier will be applied at 200 lbs and the area will be hydro-mulched with Ecoaegis Fiber Matrix at the rate of 2000 lbs. /ac. We recommend the permit be conditioned to require that all seed mixes be provided to the Washoe/Storey Conservation District for coordination with the NRCS. We recommend to ensure that native species of trees shrubs and grasses are planted on the project that the County require that applicant, by Special Condition to the permit, submit their proposed planting plan to the Washoe/Storey Conservation District, who in coordination with the USDA Natural Resources Conservation Service, will review and approve the plants and seed mix to be used

d. Item 17 – In response to Item 17 regarding the review of the Revegetation plan by the Washoe /Storey Conservation District, the applicant replied ... "No, we are deferring to the expertise of Comstock Seed's local expertise."... We recommend the permit be conditioned to require the applicant to coordinate their Revegetation Plan with the Washoe/Storey Conservation District.

e. Conceptual Landscaping Plan – Drawing LC2.1 – Revegetation Notes – the drawings indicate that that ..."Revegetated areas shall be acceptable if they exhibit a minimum of 90% coverage by at least three different species within three months of planting"... The Washoe/Storey Conservation District feels that this monitoring period and success criteria are not adequate to develop a

sustainable vegetative cover. We recommend that the County require monitoring for a period of three years with a 90% total cover. If this is not attained then the applicant would be required to reseed and monitor until the success criteria is made. We recommend that the applicant be required to provide a detailed irrigation plan for review. The plan should include the calculations for how much water is proposed for use to maintain the landscaping plan and is there adequate water rights for the amount calculated

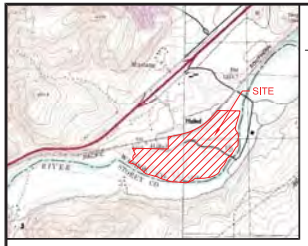
f. The proposed plan drawings do not clearly show where and what type of BMPs will be installed and maintained during the grading operations. We recommend that the County require the applicant to submit a detailed grading plan and SWPP that clearly show the BMPs to be utilized during construction and during operation of the facility to minimize impacts to water quality from storm water runoff.

g. The project is also located adjacent to the Truckee River which is a jurisdictional water of the United States under Section 404 of the Clean Water Act. We recommend the applicant have a jurisdictional wetland delineation and Ordinary High Water Line determination performed and submitted to the Corps of Engineers for approval. This will allow the applicant to be ensured that his proposed project will not involve the deposition of fill or dredged material into jurisdictional waters of the United States. Should jurisdictional waters and wetlands be identified on the property, the applicant may be required to obtain a Department of the Army Permit unless they can avoid impacts to those areas identified.

*** End of Conditions ***

ATTACHMENT G

Topographic Survey for a Portion of the W ½ of Section 15 and the E ½ of Sectoin 16, T.19N, R.21E, M.D.M., Washoe County, Nevada, by US Geomatics, dated February 9, 2015



VICINITY MAP
(1" = 2000')

LEGEND:

SUBJECT TRACT PROPERTY LINES

ADJACENT PROPERTY LINES

NOTES:

1) BASIS OF BEARING:
NORTH WAS ESTABLISHED WITH GPS OBSERVATIONS (NEVADA STATE PLANE COORDINATES, WEST ZONE, NAD83) OF NGS MONUMENT "TANG RESET", WHICH HAS COORDINATES PUBLISHED ONLINE BY THE NATIONAL GEODETIC SURVEY.

BASIS OF ELEVATION:
THE VERTICAL DATUM FOR THIS SURVEY WAS ESTABLISHED USING GPS OBSERVATIONS OF NGS MONUMENT "N 374", WHICH HAS AN ELEVATION OF 4376.39 FEET (NAVD88) ACCORDING TO DATA PUBLISHED ONLINE BY THE NATIONAL GEODETIC SURVEY.

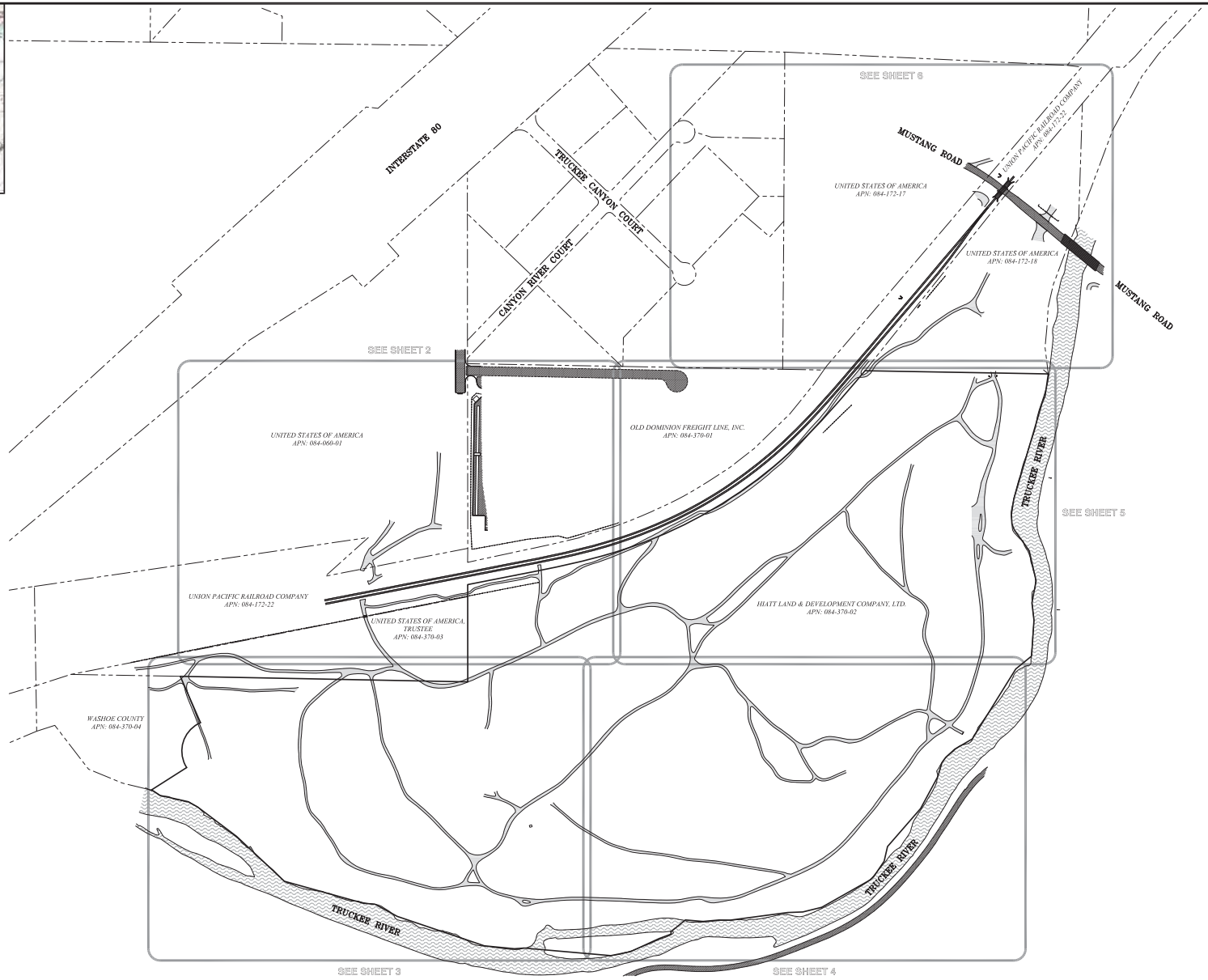
2) ALL COORDINATES AND DISTANCES SHOWN HEREON HAVE GROUND VALUES. THE WASHOE COUNTY COMBINED FACTOR OF 0.999802100 WAS USED TO SCALE GRID COORDINATES TO GROUND COORDINATES.

GROUND-TO-GRID SCALE FACTOR = 0.999802100
GRID-TO-GROUND SCALE FACTOR = 1.000197939

3) THIS MAP DOES NOT REPRESENT A BOUNDARY SURVEY, AND SHOULD NOT BE REFERRED TO OR USED AS SUCH.

4) THE FIELD WORK FOR THIS SURVEY WAS COMPLETED ON JANUARY 8, 2015.

5) THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS THE RESULT OF A PHOTOGRAMMETRIC SURVEY CONDUCTED ON DECEMBER 18, 2014, BY SPENCER & GROSS, INC., OF RENO, NEVADA.



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200 100 0 200
1" = 200'

US GEOMATICS
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Rev.	Date	Description	By	Appvd.
1	04-04-2015	ADDED FEMA FLOOD ZONES AND FLOODWAY	BPT	

REVISIONS

TECTONICS DESIGN GROUP

TOPOGRAPHIC SURVEY FOR SCANNELL PROPERTIES

A PORTION OF THE W 1/2 OF SECTION 15 AND THE E 1/2 OF SECTION 16, T.19N., R.21E., M.D.M.

WASHOE COUNTY NEVADA

Project No:	184-06-14
Date:	01-19-2015
Drawn by:	BPT
Designed by:	
Checked by:	
Horiz. scale:	1" = 200'
Vertical scale:	
Projection:	
Horiz. datum:	NAD83
Vertical datum:	NAVD88

SHEET
1 OF 6

LEGEND:

- SUBJECT TRACT PROPERTY LINES
- ADJACENT PROPERTY LINES
- RIGHT-OF-WAY CENTERLINE
- DITCH FLOWLINE
- GUARD RAIL
- FENCE LINE
- TREE OR BRUSH LINE
- OVERHEAD WIRES
- UTILITY POLE
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REVISIONS

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WASHOE COUNTY NEVADA

Project No:	184-06-14
Date:	01-19-2014
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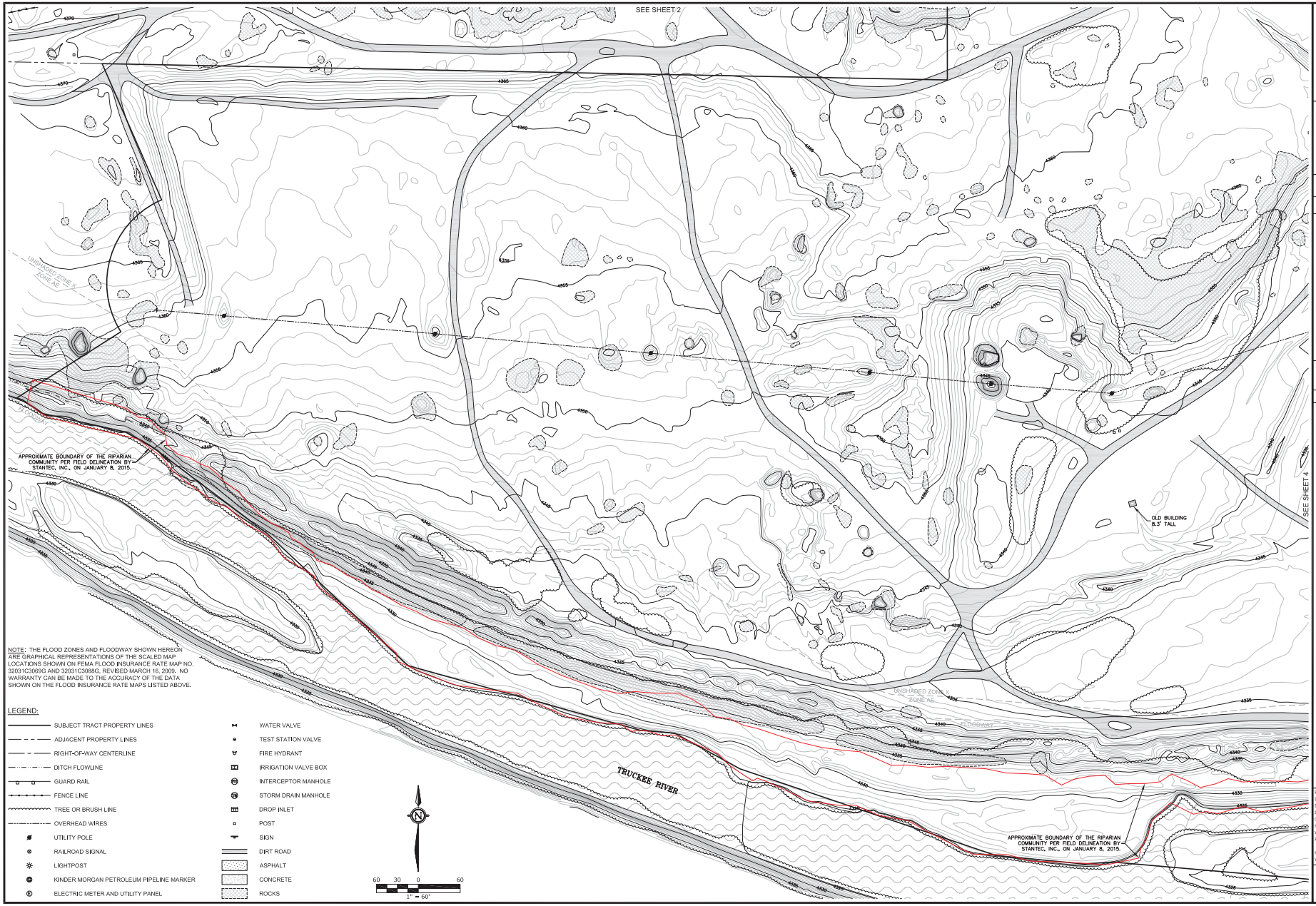
Designed by:	
Checked by:	
Horiz. scale:	1" = 60'
Vertical scale:	1' CONTOURS
Projection:	
Horiz. datum:	NAD83
Vertical datum:	NAVD88

SHEET 2 OF 6



NOTE: THE FLOOD ZONES AND FLOODWAY SHOWN HEREON ARE GRAPHICAL REPRESENTATIONS OF THE SCALED MAP LOCATIONS SHOWN ON FEMA FLOOD INSURANCE RATE MAP NO. 32031C3069G AND 32031C3088G, REVISED MARCH 16, 2009. NO WARRANTY CAN BE MADE TO THE ACCURACY OF THE DATA SHOWN ON THE FLOOD INSURANCE RATE MAPS LISTED ABOVE.

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WASHOE COUNTY NEVADA

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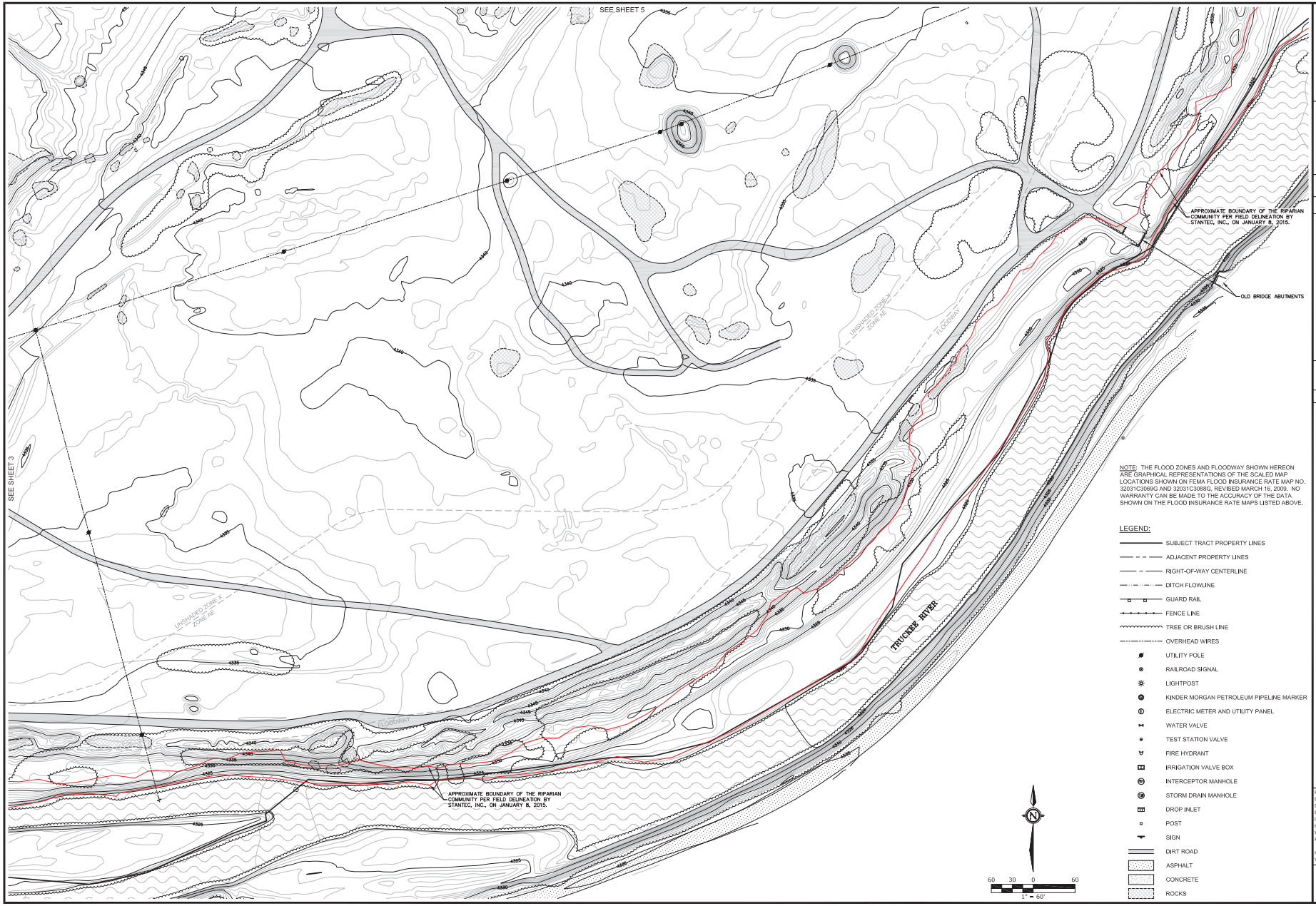
SHEET 3 OF 6



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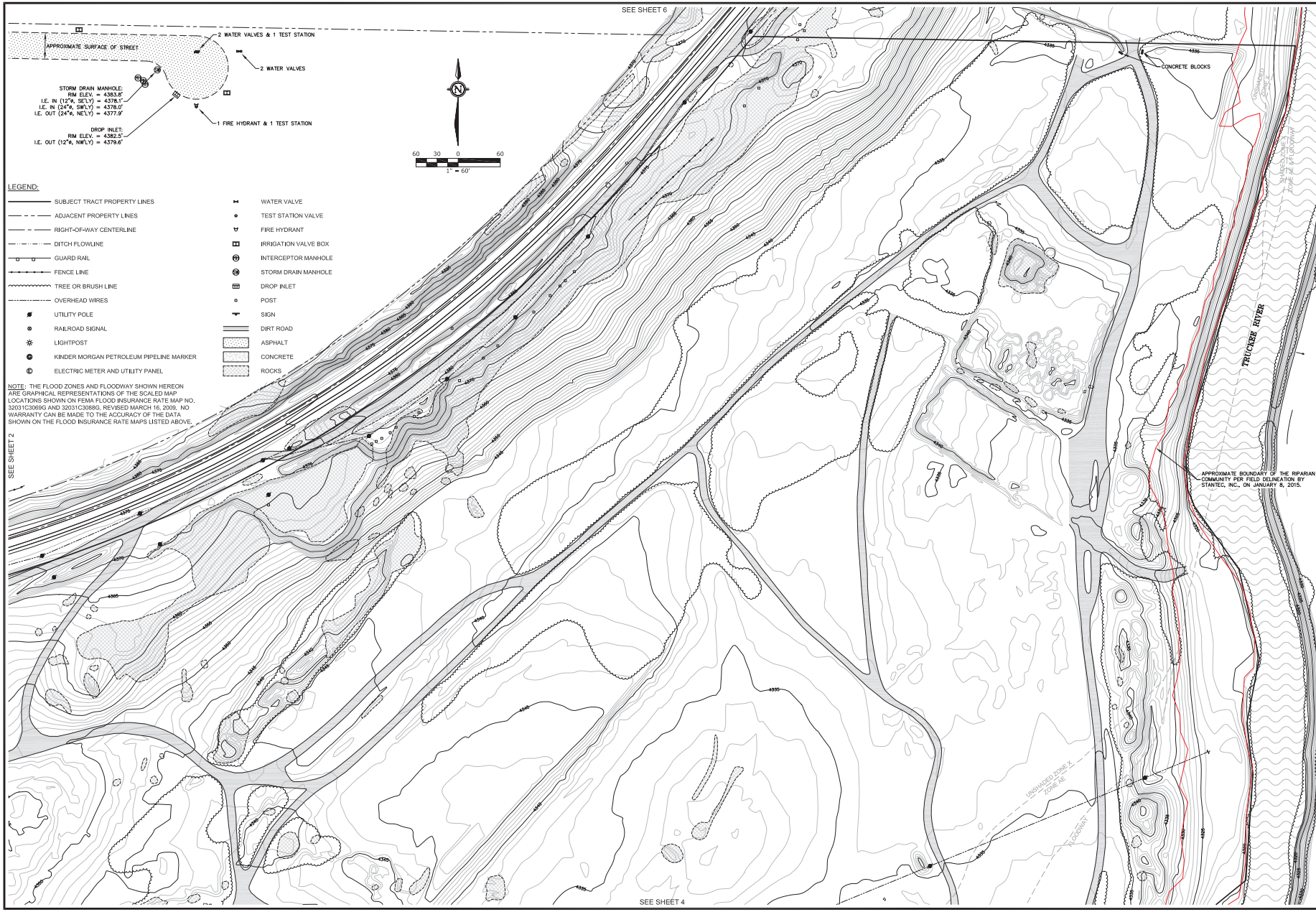
SHEET 4 OF 6



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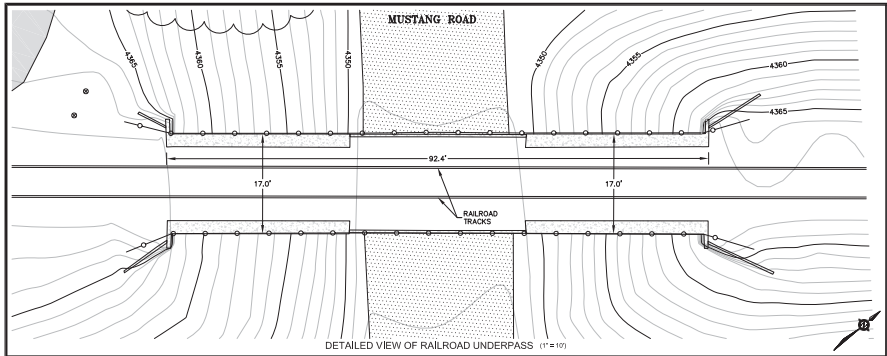
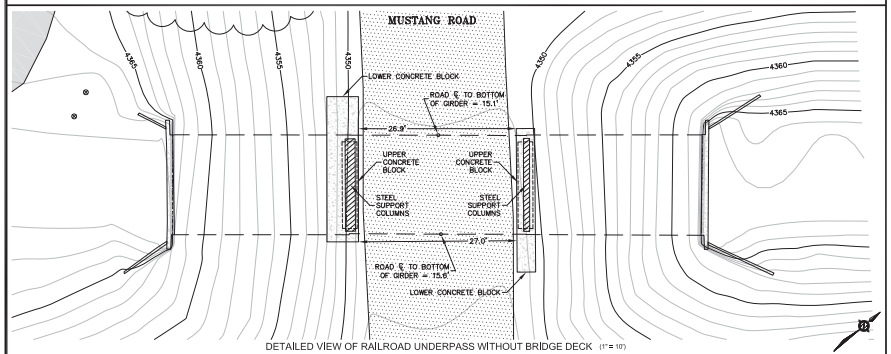
SHEET 5 OF 6



DETAILED VIEW OF RAILROAD UNDERPASS (1" = 10')



DETAILED VIEW OF RAILROAD UNDERPASS WITHOUT BRIDGE DECK (1" = 10')

LEGEND:

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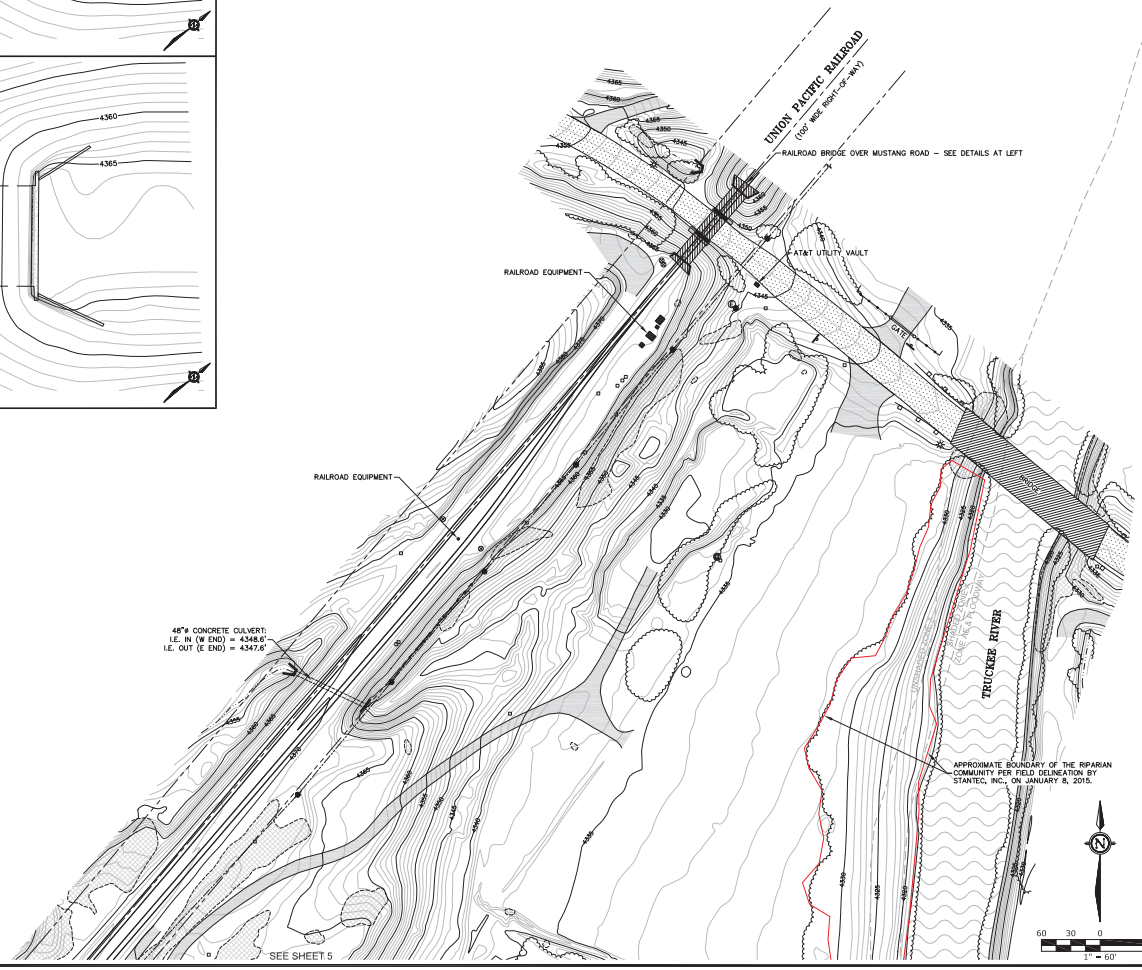
- ROCKS

NOTE: THE FLOOD ZONES AND FLOODWAY SHOWN HEREON ARE GRAPHICAL REPRESENTATIONS OF THE SCALED MAP LOCATIONS SHOWN ON FEMA FLOOD INSURANCE RATE MAP NO. 32031C3069G AND 32031C3088G, REVISED MARCH 16, 2009. NO WARRANTY CAN BE MADE TO THE ACCURACY OF THE DATA SHOWN ON THE FLOOD INSURANCE RATE MAPS LISTED ABOVE.



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REVISIONS

TECTONICS DESIGN GROUP

TOPOGRAPHIC SURVEY FOR SCANNELL PROPERTIES

A PORTION OF THE W 1/2 OF SECTION 15 AND THE E 1/2 OF SECTION 16, T.19N., R.21E., M.D.M.

WASHOE COUNTY NEVADA

Project No:	184-06-14
Date:	01-19-2014
Drawn by:	BPT
Designed by:	
Checked by:	
Horiz. scale:	1" = 60'
Vertical scale:	1' CONTOURS
Projection:	
Horiz. datum:	NAD83
Vertical datum:	NAVD88

SHEET 6 OF 6

ATTACHMENT H

Waters of the United States Jurisdictional Determination, Mustang Road Property, Washoe County, Nevada, by Stantec Consulting Services, dated January 14, 2015

WATERS OF THE UNITED STATES JURISDICTIONAL DETERMINATION MUSTANG ROAD PROPERTY WASHOE COUNTY, NEVADA

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Stantec Project Number 203703051

January 14, 2015

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ABBREVIATIONS

ºF	Degrees Fahrenheit
AMSL	Above Mean Sea Level
CFR	Code of Federal Regulation
EPA	United States Environmental Protection Agency
HUC	Hydrologic Unit Code
I-80	Interstate 80
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Pezonella	Pezonella Associates, Inc.
Stantec	Stantec Consulting Services Inc.
SWANCC	Solid Waste Agency of Northern Cook County
SWReGAP	Southwest Regional Gap Analysis Project
TNW	Traditional Navigable Waters
USACE	United States Army Corps of Engineers
USGS	United States Geologic Survey
WOUS	Waters of the United States

Executive Summary

Stantec Consulting Services Inc. (Stantec) performed a field investigation on January 8, 2015 to evaluate the potential jurisdictional status of channels and to delineate waters of the United States (WOUS) at the Mustang Road Property being acquired by Scannell Properties located approximately half a mile east of the town of Lockwood, Nevada in Washoe County.

Stantec inventoried all drainages and drainage-like features within the property and determined whether they had a potential tributary connection to any known jurisdictional drainage. The property is located adjacent to the Truckee River, a federally jurisdictional waterway; however, no drainages, wetlands, or waterways were found within the survey area. There are no mapped springs occurring in the survey area, and no evidence of springs were observed during the field investigation.

The only water feature mapped by the National Hydrography Dataset (NHD) that occurs within the survey area is a historical irrigation canal which is a remnant of the agriculture practices that took place throughout the area in the mid-twentieth century. This feature was investigated and showed no evidence of ordinary high water mark (OHWM) indicators or that the channel conveys flow on a frequent and regular basis. The headgate which diverted water from the Truckee River through this historical canal no longer exists. Furthermore, a large berm has been constructed along the southern boundary of the survey area in order to protect the property from flooding, and this berm effectively severs any surface water connection that may have existed between features in the survey area and the Truckee River.

The extent of the riparian community that exists along the Truckee River was delineated throughout the survey area, and the proposed project will avoid this area entirely. There will be no impacts to the Truckee River below the OHWM and no impacts to the Truckee River riparian community that exists there. Since the riparian community is located along the federally jurisdictional Truckee River, this area is considered to be jurisdictional by the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. However, this area will not be impacted. There are no features, other than the riparian community, that have the potential to be considered jurisdictional.

These findings should be considered preliminary until the USACE makes a final approved determination in coordination with the United States Environmental Protection Agency (EPA).

1.0 INTRODUCTION

Scannell Properties (Scannell) is proposing to develop two parcels of land (Mustang Road Property) located adjacent to the Truckee River approximately one-half mile east of the town of Lockwood in Washoe County, Nevada (Figure 1). The property was previously the location of historical agriculture practices before being converted into a surface mining aggregate source for the development of the railroad and eventually the interstate freeway, both of which are located directly north of the Mustang Road Property. Pezonella Associates, Inc. (Pezonella) contracted Stantec Consulting Services Inc. (Stantec) on behalf of Scannell to conduct surveys of potential drainages and wetlands within the property boundaries (survey area), which is located entirely on private land owned by Hiatt Land and Development Company LTD.

The survey area encompasses approximately 119.1 acres (0.19 square miles) in Washoe County, Nevada (Figure 2) including portions of Sections 15 and 16 in Township 19 North, Range 21 East. The survey area is located on the northern side of the Truckee River approximately one mile north of the Lockwood Regional Landfill. Elevations in the survey area range from approximately 4,330 feet above mean sea level (AMSL) to 4,380 feet AMSL.

To access the survey area from Reno, travel east on Interstate 80 (I-80) for approximately nine miles, and turn right at Exit 23 onto Mustang Road. Continue on Mustang Road for approximately one mile to reach the eastern boundary of the survey area.

Stantec has prepared a jurisdictional determination of drainage/channel features in the survey area in accordance with *Minimum Standards for Acceptance of Preliminary Wetland Delineations*, dated November 30, 2001. During the field investigations, Stantec referred to the *Corps of Engineers Wetland Delineation Manual* (USACE, 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (USACE, 2008), the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE, 2010), and the *Final Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE, 2012) for all required information regarding this jurisdictional determination.

2.0 DEFINITIONS

2.1 WATERS OF THE UNITED STATES

Waters of the United States (WOUS) are defined by 33 Code of Federal Regulation (CFR) 328.3 as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters including interstate wetlands;

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

    iii. Which are used or could be used for industrial purpose by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under the definition;

5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;

6. The territorial seas;

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6) of this section.

The following terms are defined by 33 CFR 328.3 as:

> The term “adjacent” means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands."
>
> The term “ordinary high water mark” means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

2.2 SWANCC RULING REGARDING ISOLATED WATERS

In 2001, the United States Supreme Court ruled in the Solid Waste Agency of Northern Cook County (SWANCC) case that the United States Army Corps of Engineers (USACE) cannot invoke migratory bird use as the sole basis to establish jurisdiction over certain isolated WOUS, including isolated wetlands. Prior to the ruling, the USACE considered migratory bird use of isolated wetlands to be a tie to interstate or foreign commerce, and thus claimed jurisdiction of isolated water bodies and wetlands. The SWANCC determination found that wetlands that are not adjacent to, and do not share a physical connection to an otherwise jurisdictional water body, could be considered isolated, and not subject to jurisdiction by the USACE. Likewise, drainages that did not have a tributary connection to a jurisdictional water body would also be considered isolated and not subject to jurisdiction.

For the purposes of this report, water bodies that do not meet the criteria of WOUS are termed "non-jurisdictional," and would not be subject to regulation under Section 404 of the Clean Water Act.

2.3 RAPANOS GUIDANCE REGARDING TRIBUTARY STREAMS

The United States Environmental Protection Agency (EPA) and USACE issued a joint legal guidance memoranda regarding Clean Water Act jurisdiction of tributary streams based on the United States Supreme Court's decision in *Rapanos v. United States* and *Carabell v. United States*. The guidance memos state that the agencies will assert jurisdiction over the following categories of water bodies:

- Traditional navigable waters (TNW);
- Wetlands adjacent to TNW;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months);
- Wetlands that directly abut such tributaries.

The Rapanos guidance memo further stated:

> In addition, the agencies will assert jurisdiction over those adjacent wetlands that have a continuous surface connection with a relatively permanent, non-navigable tributary, without the legal obligation to make a significant nexus finding. As explained above, the plurality opinion and the dissent agree that such wetlands are jurisdictional. The plurality opinion indicates that "continuous surface connection" is a "physical connection requirement." Therefore, a continuous surface connection exists between a wetland and a relatively permanent tributary where the wetland directly abuts the tributary (e.g., they are not separated by uplands, a berm, dike, or similar feature).

Since issuance of the Rapanos guidance, jurisdictional determinations must include a written assessment of the relative permanence of flow in each tributary. For any stream and/or stream reach that does not have relatively permanent flow, the flow and ecological characteristics must be evaluated to determine if the tributary has a significant nexus to a TNW.

2.4 WETLANDS

Wetlands are defined by the USACE and EPA in 40 CFR 230.3 and 33 CFR 328.3 as:

> Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

3.0 METHODOLOGY

Prior to the field investigation, topographic maps and aerial photographs of the survey area were reviewed for indications of ephemeral, intermittent, and perennial drainages as well as mapped wetlands and spring locations. The United States Fish and Wildlife Service National Wetlands Inventory and the United States Geologic Survey (USGS) National Hydrography Dataset (NHD) were reviewed for these features as well. Stantec also reviewed the National Agricultural Imagery Program 2006 and 2010 aerial photographs to help determine where potential unmapped drainage and spring locations may exist within the survey area.

Stantec visited the survey area on January 8, 2015, and performed a formal field investigation to identify possible jurisdictional WOUS, including wetlands. Stantec personnel traversed the survey area, investigating all drainage and drainage-like features as well as potential springs utilizing Trimble Global Positioning System units to mark points of interest.

3.1 WATERS OF THE UNITED STATES

3.1.1 Drainages

Drainages and drainage-like features within the survey area were assessed for the presence of OHWM indicators and some evidence that the drainage experiences surface water flows on a frequent and regular basis (more than three months a year). These characteristics were considered to be indicative of a jurisdictional WOUS. An Arid West Ephemeral and Intermittent Streams OHWM Datasheet would have been completed for any drainage with the presence of OHWM indicators, however, no OHWM indicators were found within the survey area. The only drainage within the survey area that has the potential to convey water is a historical irrigation canal, and this feature no longer exists.

Photographs and notes regarding site conditions were taken throughout the survey area and are provided in Appendix A. The USACE Aquatic Resources Table is provided as Appendix B.

3.1.2 Wetlands

The USGS topographic maps and NHD data of the project area did not indicate the presence of any springs and none were encountered during the field survey. The riparian community that exists on the banks of the Truckee River was delineated in its entirety throughout the project area. Soil pits were not dug in order to assess hydric soils, as the ground was frozen during the field survey. However, since the ground was saturated and the change in vegetation communities was very apparent, hydric soils were assumed when delineating the boundary of the riparian community. USACE Wetland Determination Forms were not completed for this survey.

4.0 FINDINGS

The survey area resides within the eastern portion of the Truckee River Watershed (Hydrologic Unit Code [HUC] 16050102), which is a part of the Truckee River Basin (Hydrographic Region 6) in western Nevada (Figure 3). The Truckee River Basin drains an area of approximately 2,300 square miles and certain areas within the watershed have been classified as a "designated groundwater basins" by the State of Nevada Department of Water Resources. Designated groundwater basins are basins where permitted groundwater rights are approaching or exceed the estimated average annual recharge (NDWR, 2015).

The survey area resides on the northern side of the Truckee River in the I-80 corridor east of Reno. The terrain of the survey area is gentle rolling hills with pockets of disturbance from historical operations (Photograph A1 in Appendix A). There are no USGS-mapped features occurring within the survey area and elevations range from 4,330 to 4,380 feet AMSL. Figure 2 provides the survey area's USGS topography.

The climate in the survey area is typical for the high desert of northern Nevada and the Basin and Range province. Climate data from the Reno International Airport, located approximately 7.5 miles west of the survey area, indicates that the survey area averages 7.22 inches of precipitation per year, with average daytime temperatures ranging from 45.6 degrees Fahrenheit (°F) in the winter to 91.7 °F in the summer. The period of record for this climate station includes data from March 1937 through March 2013. Climate data for the year preceding the field investigation was not available for this survey (WRCC, 2015).

Table 1 Average Weather Conditions

Month	Average Precipitation (inches)	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)
January	1.12	45.6	20.9
February	0.97	50.9	24.6
March	0.75	56.8	27.9
April	0.43	63.9	32.3
May	0.56	72.9	39.8
June	0.42	82.2	46.0
July	0.25	91.7	51.3
August	0.23	89.8	49.1
September	0.30	81.9	42.4
October	0.44	69.7	33.5
November	0.69	55.5	25.9
December	1.05	46.4	21.0
Annual	7.22	67.3	34.6

WRCC, 2015

4.1 SOILS

Soils within the survey area have been mapped by the Natural Resources Conservation Service (NRCS) and are described in the *Soil Survey of Washoe County, Nevada, South Part* (NRCS, 2015), and are available online at the NRCS's web soil survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm). The survey area includes three soil types (Figure 4). The NRCS descriptions of these soil types are as follows:

Soil Unit 174: Indian Creek extremely stony sandy loam, 2 to 8 percent slopes
This soil unit is found on fan remnants at elevations between 4,500 and 5,500 feet AMSL. This soil is comprised of 85 percent Indian Creek and similar soils and 15 percent minor inclusions, and this soil is described as being well drained. The depth to the water table is greater than 80 inches, and this soil never experiences flooding. The Indian Creek extremely stony sandy loam, 2 to 8 percent slopes, is found in the northwest corner of the survey area.

Soil Unit 932: Old Camp stony sandy loam, 8 to 15 percent slopes
This soil unit is found on hills at elevations between 4,500 feet and 6,000 feet AMSL. This soil type is comprised of 85 percent Old Camp and similar soils and 15 percent minor components. This soil is described as being well drained. The depth to the water table is greater than 80 inches and this soil never experiences flooding. The Old Camp stony sandy loam, 8 to 15 percent slopes, soil type can be found along the north boundary of the survey area.

Soil Unit 991: Xeric Torriorthents-Urban land complex
This soil unit is found on fan piedmonts and is composed of 45 percent urban land, 45 percent xeric torriorthents and similar soils, and 10 percent minor inclusions. This soil is described as being well drained. The depth to the water table is greater than 80 inches, and this soil never experiences flooding. The Xeric Torriorthents-Urban land complex is found throughout the survey area.

4.2 VEGETATION

The Southwest Regional Gap Analysis Program (SWReGAP) documented land cover types are presented on Figure 5. The SWReGAP is a national program administered by the USGS Biological Resources Discipline, aimed at documenting the distribution of plant communities and selected animal species. This data is used to compare these distributions to land stewardship with the intention of promoting conservation by providing broad geographic information on biological diversity to resource managers, planners, and policy makers who can use the information to make informed decisions. According to this dataset, the most abundant communities that exist within the survey area are Inter-Mountain Basins Mixed Salt Desert Scrub and Inter-Mountain Basins Big Sagebrush Shrubland. General descriptions of these vegetation communities are provided below.

<u>Inter-Mountain Basins Mixed Salt Desert Scrub</u>
The sparse to moderately dense cover of woody species is dominated by fourwing saltbrush (*Atriplex canescens*) (may codominate with sagebrush [*Artemisia tridentate*]), shadscale

saltbrush (*Atriplex confertifolia*) (may codominate with water jacket [*Lycium andersonii*]), mound saltbrush (*Atriplex obovata*), bud sagebrush (*Picrothamnus desertorum*), or winterfat (*Krascheninnikovia lanata*). Other shrubs include Stansbury cliffrose (*Purshia stansburiana*), Nevada dalea (*Psorothamnus polydenius*), jointfir (*Ephedra* spp.), catclaw acacia (*Acacia greggii*), button brittlebrush (*Encelia frutescens*), matted crinklemat (*Tiquilia latior*), Gray's feverfew (*Parthenium confertum*), cattle saltbrush (*Atriplex polycarpa*), big saltbrush (*Atriplex lentiformis*), bud sagebrush, alkali seaheath (*Frankenia salina*), prairie sagewort (*Artemisia frigida*), rabbitbrush (*Chrysothamnus* spp.), desert thorn (*Lycium* ssp.), seepweed (*Suaeda* spp.), soapweed yucca (*Yucca glauca*), and horsebrush (*Tetradymia spinosa*). A number of annual species may also grow in association with the shrubs and grasses of this system, although they are usually rare and confined to areas of recent disturbance. Forb cover is generally sparse. Perennial forbs that might occur include scarlet globemallow (*Sphaeralcea coccinea*), rose heath (*Chaetopappa ericoides*), charming woodyaster (*Xylorhiza venusta*), and blazingstar (*Mentzelia* spp.) species. Annual natives include plantain (*Plantago* spp.), sixweeks fescue (*Vulpia octoflora*), or Nuttall's povertyweed (*Monolepis nuttalliana*). Associated halophytic annuals include red swampfire (*Salicornia rubra*), dwarf saltworth (*Salicornia bigelovii*), and seepweed species. Exotic annuals that may occur include Russian thistle (*Salsola kali*) and cheat grass (*Bromus tectorum*). Cacti such as *Opuntia* spp. and *Echinocereus* spp. may be present in some occurrences. Trees are not usually present but some scattered *Juniperus* spp. may be found (CNHP, 2005).

Inter-Mountain Basins Big Sagebrush Shrubland

The Inter-Mountain Basins Big Sagebrush Shrubland system occurs throughout much of the western United States, typically in broad basins between mountain ranges, plains and foothills between 4,921 and 7,545 feet AMSL. Soils are typically deep, well-drained and non-saline. These shrublands are dominated by basin big sagebrush (*Artemisia tridentata ssp. tridentata*) and/or Wyoming big sagebrush (*Artemisia tridentata ssp. Wyomingensis*). Scattered junipers (*Juniperus* spp.), greasewood (*Sarcobatus vermiculatus)*, and saltbush (*Atriplex* spp.) may be present in some stands. Rubber rabbitbrush (*Ericameria nauseosa*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), antelope bitterbrush (*Purshia tridentate*), or mountain snowberry (*Symphoricarpos oreophilus*) may codominate disturbed stands. Perennial herbaceous components typically contribute less than 25 percent vegetative cover. Common graminoid species include Indian ricegrass (*Achnatherum hymenoides*), blue grama (*Bouteloua gracilis*), thickspike wheatgrass (*Elymus lanceolatus*), Idaho fescue (*Festuca idahoensis*), needle and thread (*Hesperostipa comate*), basin wildrye (*Leymus cinereus*), James' galleta (*Pleuraphis jamesii*), western wheatgrass (*Pascopyrum smithii*), Sandberg bluegrass (*Poa secunda*), or bluebunch wheatgrass (*Pseudoroegneria spicata*) (NatureServe, 2005).

4.3 HYDROLOGY

The only water feature that has been mapped within the survey area is an historical irrigation canal. There are no other features that have the potential to convey water through or out of the survey area.

4.4 DRAINAGE INVENTORY

The geographic extent of ephemeral drainages is determined by the presence of an OHWM. USACE regulations define OHWM at 33 CFR 328.3(e), which states: "The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." The NHD data for the survey area (Figure 6) shows a single water feature, which runs diagonally through the property. This feature was investigated for any evidence of an OHWM and an established connection to the Truckee River.

The historical irrigation canal no longer exists and has no connection to the Truckee River in any way. The headgate that once diverted water from the Truckee River into the canal has been buried by the berm that was constructed to protect the property (Photograph A2 in Appendix A), and the canal has effectively been dammed at the downstream end by Mustang Road. The relic channel was investigated at multiple locations (Photo Points 1 through 3) and shows no evidence of an OHWM and is completely colonized by upland vegetation throughout its entirety (Photographs A3 through A5 in Appendix A). This historical irrigation canal effectively no longer exists.

Since this feature shows no evidence of an OHWM and has no connection to a jurisdictional waterway, it is considered to be non-jurisdictional by the USACE and is not subject to regulation under Section 404 of the Clean Water Act.

4.5 WETLANDS

The USGS topographic map for the survey area did not identify any mapped springs occurring within the survey area, and no springs were observed during the field investigation. The riparian community that exists along the banks of the Truckee River was delineated throughout the survey area by mapping the change in vegetation communities from hydrophytic species, such as cottonwoods, willows, and rushes, to upland species, such as sage and rabbitbrush (Photograph A6 in Appendix A). Stantec mapped 8.75 acres of riparian community within the survey area.

The riparian community was mapped in order for Scannell to avoid this area. Project activities will not impact the riparian community and all disturbance activities will take place outside of this area. Since the riparian community is part of the floodplain of the federally jurisdictional Truckee River, this area is subject to regulation under Section 404 of the Clean Water Act.

4.6 SIGNIFICANT NEXUS DETERMINATION

In accordance with Rapanos Guidance procedures for any stream and/or stream reach that does not have relatively permanent flow, a significant nexus analysis must be conducted to determine the potential effects to the physical, chemical and biological integrity of the

receiving waterway as a result of activities conducted within the survey area. However, since there are no features within the survey area that have the potential to convey water, a significant nexus determination was not conducted for this survey.

5.0 CONCLUSION

The survey area resides within the eastern portion of the Truckee River Watershed (HUC 16050102), which is a part of the Truckee River Basin (Hydrographic Region 6) in western Nevada (Figure 3). The survey area was traversed by Stantec personnel and no features were identified that could be considered jurisdictional to the USACE under Section 404 of the Clean Water Act, with the exception of the riparian community that exists along the Truckee River.

The riparian community was delineated throughout the survey area by identifying the change in vegetation communities from hydrophytic species to upland species. A total of 8.75 acres were mapped within the survey area (Figure 7). However, this area will be avoided entirely by Scannell and there will be no impacts to this habitat type. A summary of all water resources inventoried by Stantec within the survey area is provided below in Table 3.

Table 2 Summary of Drainages and Wetlands

Drainage/Wetland Name	Acres Jurisdictional Waters[1]	Acres Non-jurisdictional Waters[1]	Flow Regime	Connection to a Jurisdictional Drainage	Justification
Irrigation Canal	**0**	-	Never	Isolated	This drainage did not exhibit an OHWM.
Riparian Community	**8.75**	-	Floodplain	Adjacent to TNW	Floodplain community on banks of TNW.
Totals	**8.75**	-			

[1]This is the acreage of the drainage or wetland within the survey area.

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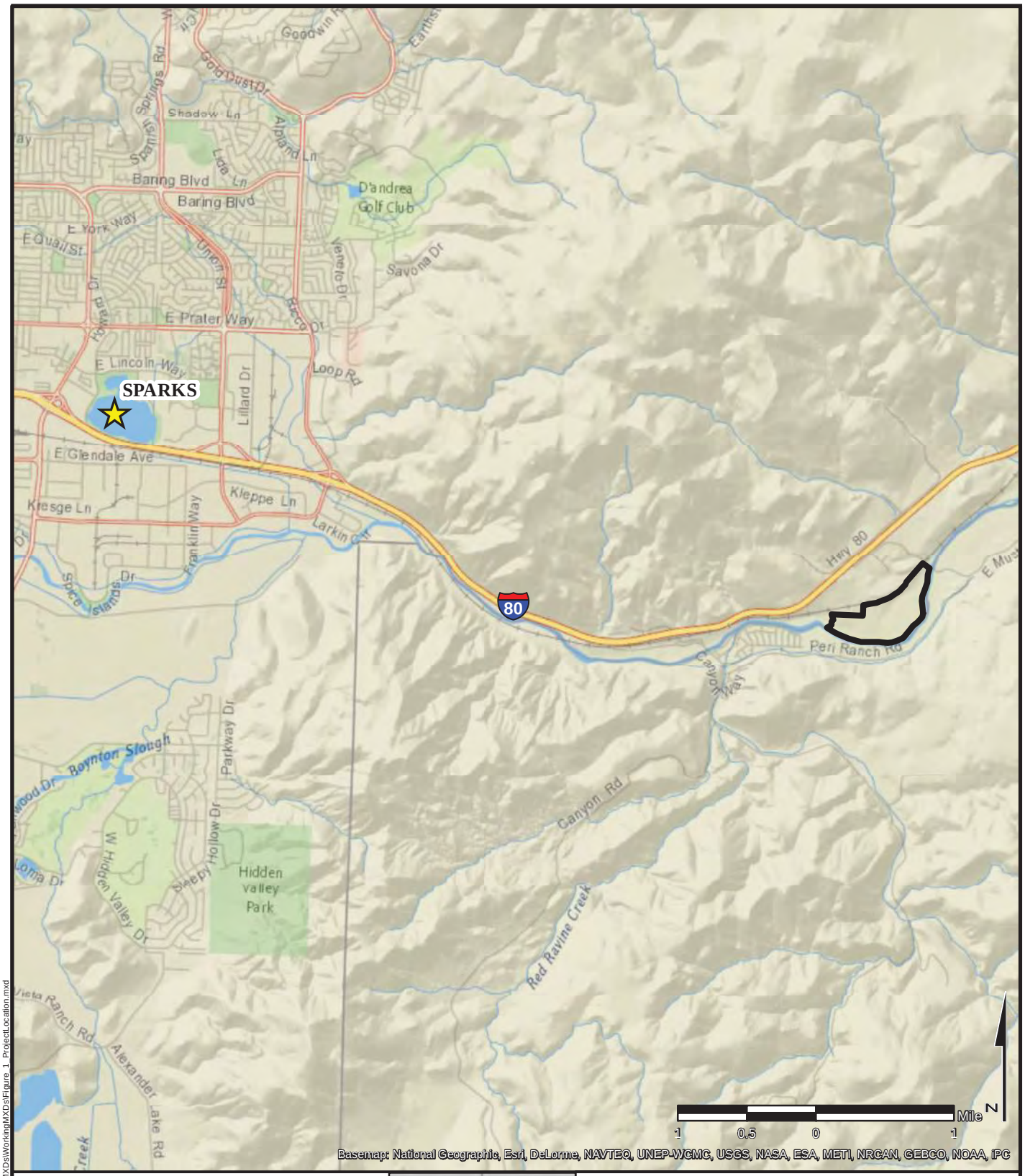
FIGURES



Project Area

PEZONELLA WOUS SURVEY

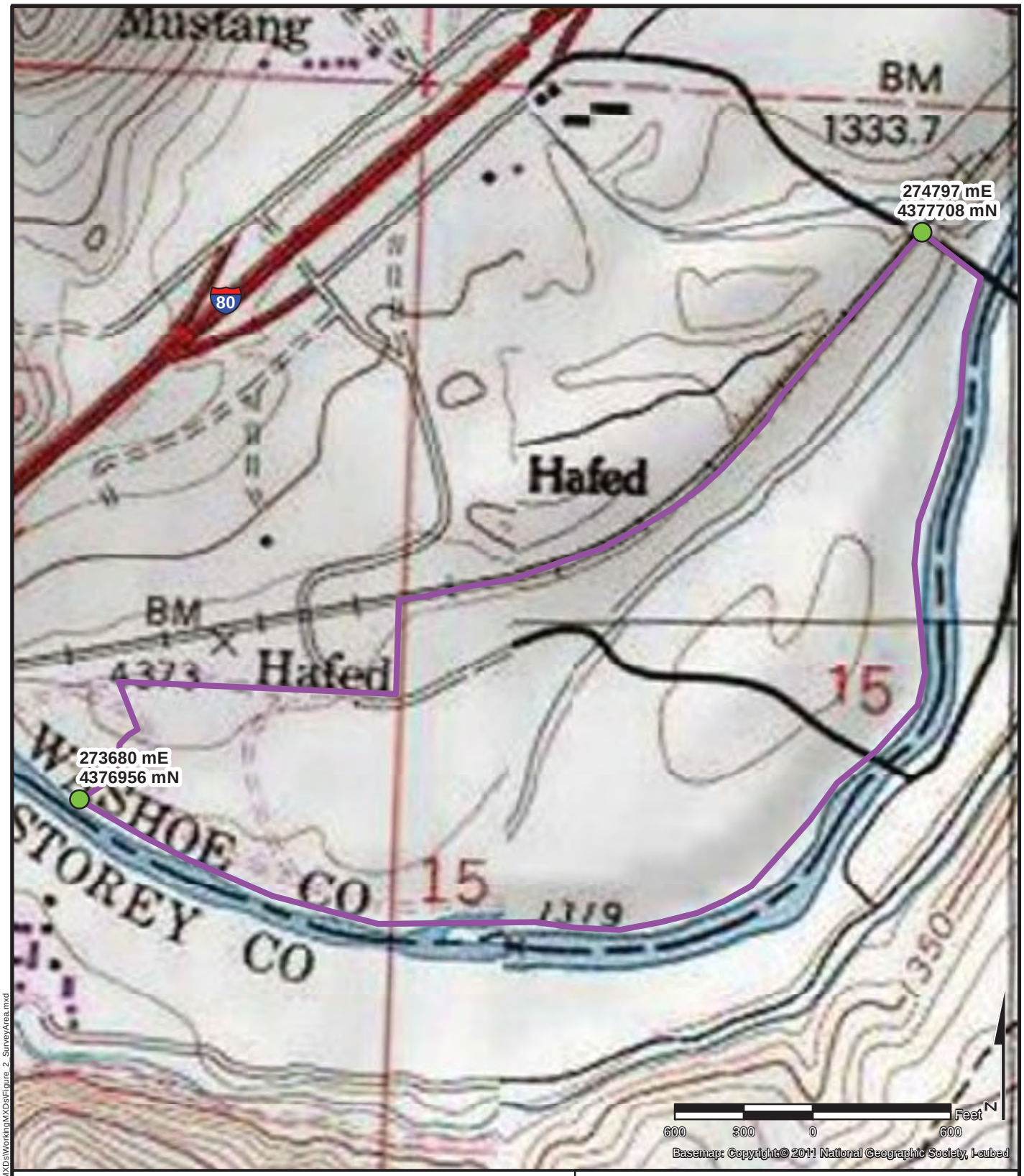
FIGURE 1
PROJECT LOCATION

Stantec

DRAWN BY	JV	DATE DRAWN	1/13/2015
SCALE	1 in = 1 mile		
PROJECT	203703051		

X:\NA\Clients\Pezonella\WOUS_Survey_203703051\MXDs\WorkingMXDs\Figure_1_ProjectLocation.mxd

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Survey Area (119.1 acres)

PEZONELLA WOUS SURVEY

FIGURE 2
SURVEY AREA

Stantec

DRAWN BY	JV	DATE DRAWN	1/13/2015
SCALE	1 in = 600 feet		
PROJECT	203703051		

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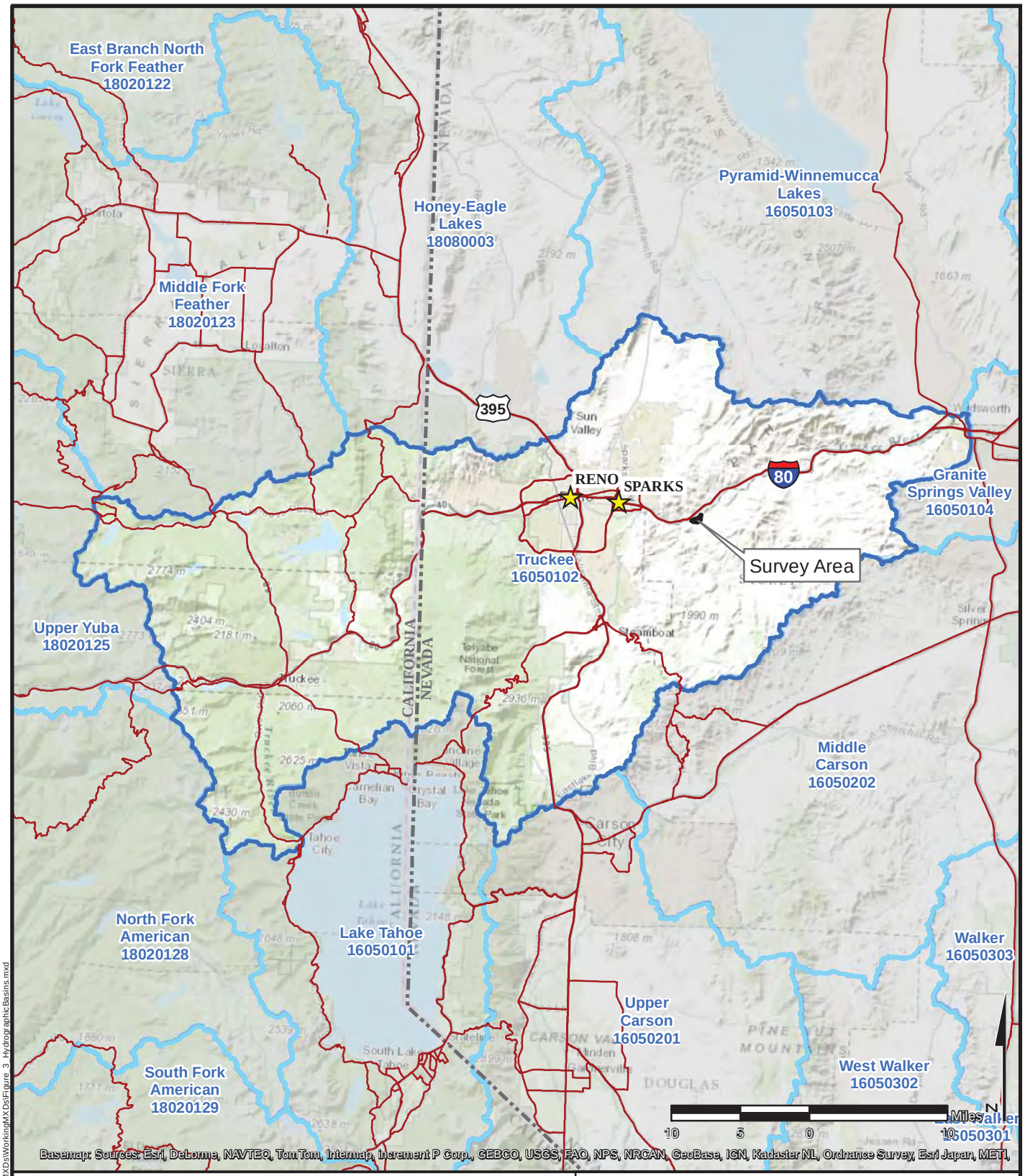

Survey Area

PEZONELLA WOUS SURVEY

FIGURE 3
HYDROGRAPHIC BASINS

Stantec

DRAWN BY	JV	DATE DRAWN	1/13/2015
SCALE	1 in = 10 miles		
PROJECT	203703051		

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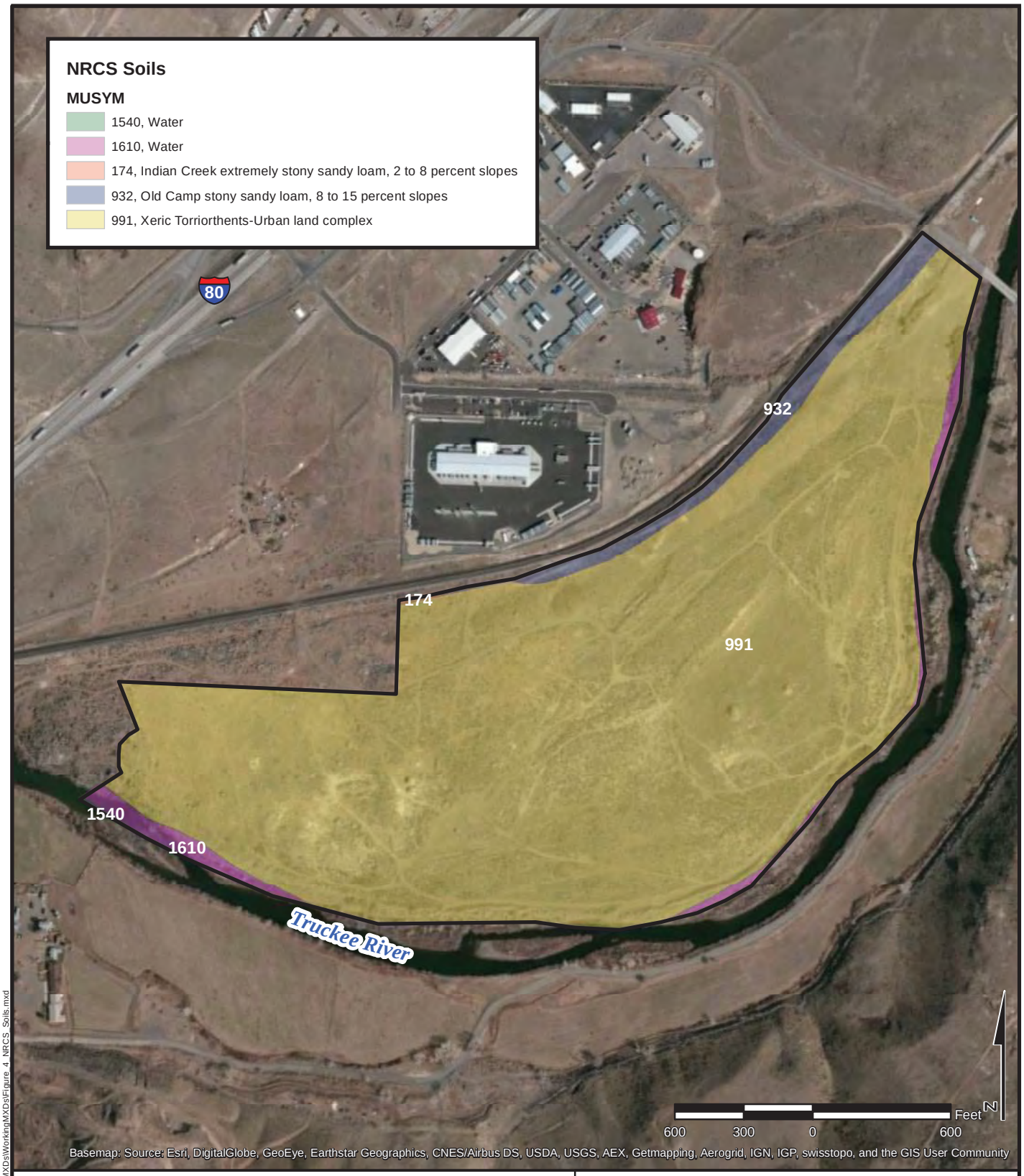

Survey Area

PEZONELLA WOUS SURVEY

FIGURE 4
NRCS SOILS

Stantec

DRAWN BY	JV	DATE DRAWN	1/13/2015
SCALE	1 in = 600 feet		
PROJECT	203703051		

X:\NA\Clients\Pezonella\WOUS_Survey_203703051\MXDs\WorkingMXDs\Figure_4_NRCS_Soils.mxd

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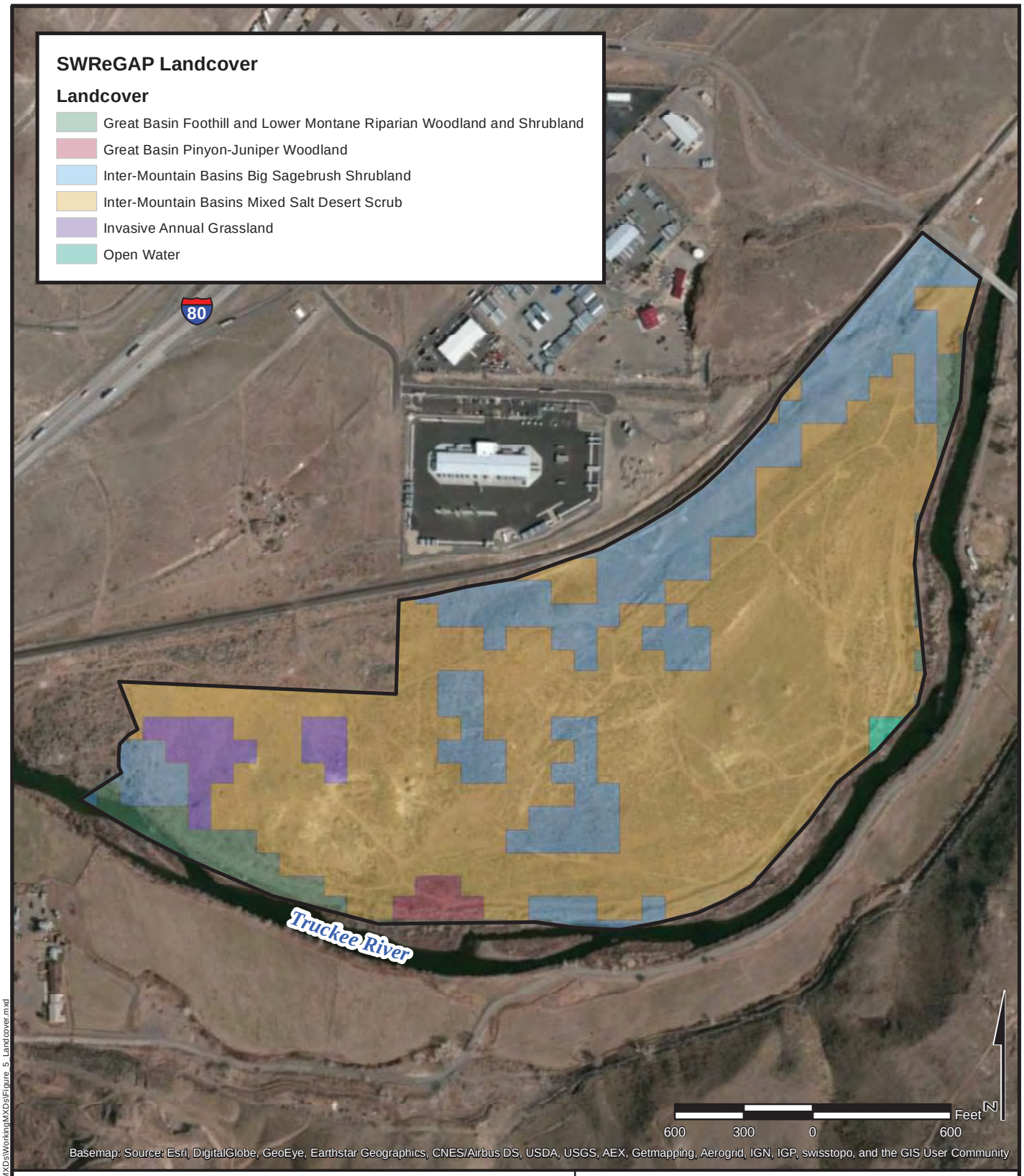


Survey Area

PEZONELLA WOUS SURVEY

FIGURE 5
LANDCOVER

Stantec

DRAWN BY	JV	DATE DRAWN	1/13/2015
SCALE	1 in = 600 feet		
PROJECT	203703051		

X:\NA\Clients\Pezonella\WOUS_Survey_203703051\MXDs\WorkingMXDs\Figure_5_Landcover.mxd

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Survey Area

NHD Drainages

No OHWM

OHWM

PEZONELLA WOUS SURVEY

FIGURE 6
NHD DRAINAGES

Stantec

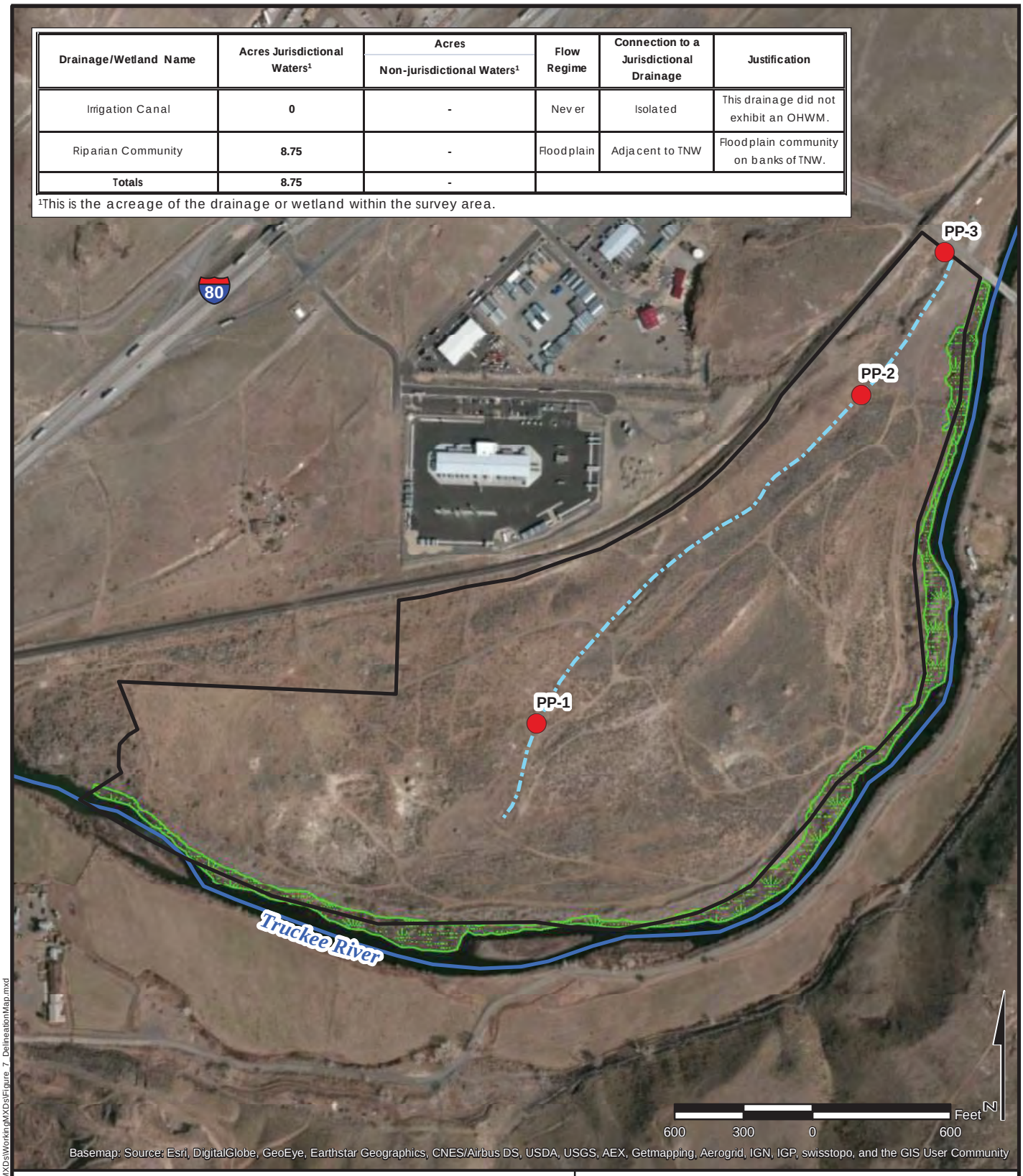
DRAWN BY	JV	DATE DRAWN	1/13/2015
SCALE	1 in = 600 feet		
PROJECT	203703051		

X:\NV\Clients\Pezonella\WOUS_Survey_203703051\MXDs\Working\MXDs\Figure_6_NHD_Drainages.mxd

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Drainage/Wetland Name	Acres Jurisdictional Waters[1]	Acres Non-jurisdictional Waters[1]	Flow Regime	Connection to a Jurisdictional Drainage	Justification
Irrigation Canal	0	-	Never	Isolated	This drainage did not exhibit an OHWM.
Riparian Community	8.75	-	Floodplain	Adjacent to TNW	Floodplain community on banks of TNW.
Totals	8.75	-			

[1]This is the acreage of the drainage or wetland within the survey area.



Basemap: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Survey Area

Photo Points

Riparian Community

NHD Drainages

No OHWM, Non-Jurisdictional

OHWM, Jurisdictional

Delineator: Matt McKissick
Field Dates: January 8, 2015
Report Preparation: January 2015
Report Revisions: N/A

PEZONELLA WOUS SURVEY

FIGURE 7
DELINEATION MAP

Stantec

DRAWN BY	JV	DATE DRAWN	1/14/2015
SCALE	1 in = 600 feet		
PROJECT	203703051		

X:\NA\Clients\Pezonella\WOUS_Survey_203703051\MXDs\Working\MXDs\Figure_7_DelineationMap.mxd

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

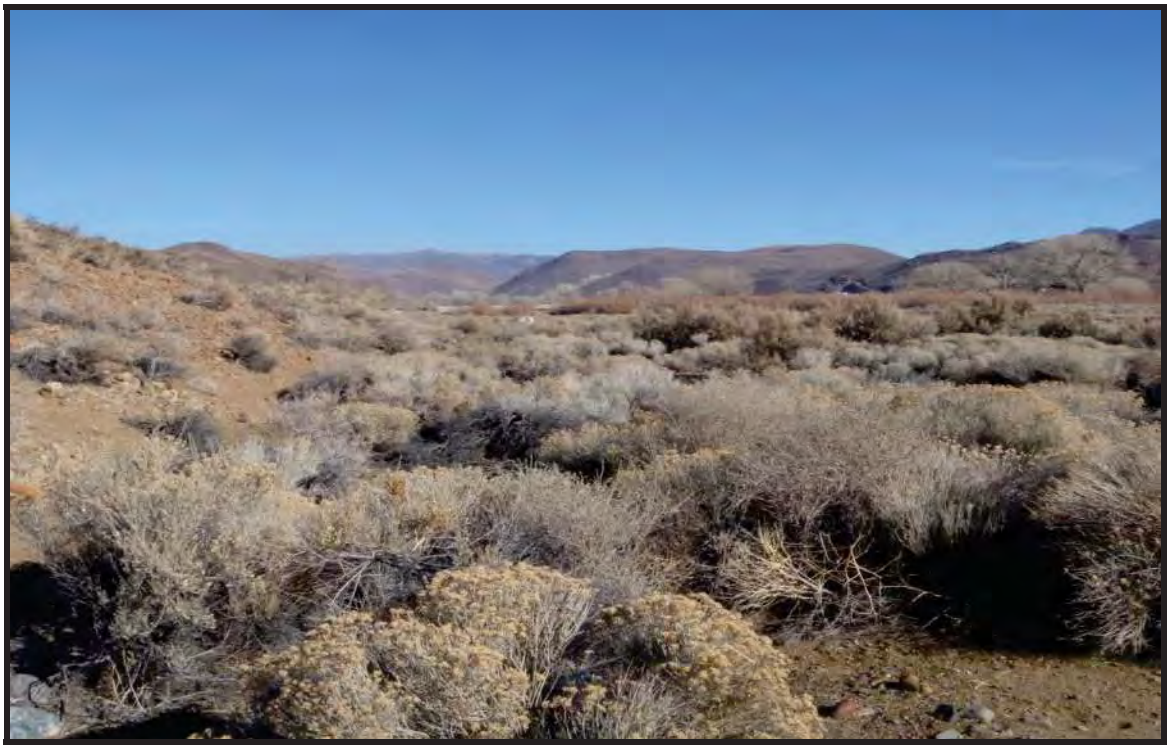
APPENDIX A

Drainage Inventory Photographs

Photograph A1 - Overview of survey area, looking east.

Photograph A2 - Photograph showing the berm along the southern boundary of the survey area.

Photograph A3 - Looking down-gradient along the historical irrigation canal at Photo Point 1. No OHWM indicators are present.



Photograph A4 - Looking down-gradient along the historical irrigation canal at Photo Point 2. No OHWM indicators are present.

Photograph A5 - Looking down-gradient at the end of the historical irrigation canal at Photo Point 3. Mustang Ranch Road crosses the channel with no culvert. No OHWM indicators are present.

Photograph A6 - Showing the riparian community (left) transitioning into upland vegetation (right) on the river-side of the berm which runs along the southern boundary of the survey area.

APPENDIX B

USACE Aquatic Resources Table

Waters_Name	Cowadin_Code	HGM_Code	Measurement_Type	Amount	Units	Waters_Types	Latitude	Longitude	Local_Waterway
Irrigation Canal (no OHWM)	U	RIVERINE	Linear	0	FOOT	UPLAND	39° 30' 47.14" N	-119° 37′ 31.14″	Truckee River
Riparian Communtiy	RP1FO	RIVERINE	Area	8.75	ACRE	TNWW	39° 30' 53.83" N	-119° 37' 10.17"	Truckee River

ATTACHMENT I

United State Department of the Interior Bureau of Land Management Right-of-Way Grant, Serial Number N-76896 (Issued to Storey County for Portion of Mustang Road, executed June 30, 2003)

FORM 2800-14
(August, 1985)

Issuing Office
Carson City Field Office

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT
SERIAL NUMBER N-76896

1. *A right-of-way is hereby granted pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).*

2. *Nature of Interest:*

   a. *By this instrument, the holder:*

   Storey County
   P.O. Drawer D
   Virginia City, NV 89440

   receives a right to construct, operate, maintain, and terminate an access road and associated street lights across public lands described as follows:

   Mount Diablo Meridian

   T. 19 N., R. 21 E.,
   Sec. 10, S½S½SW¼.

   The right-of-way area granted herein is 50 feet wide, 950 feet long, containing 1.09 acres, more or less.

   b. *This instrument shall terminate on* June 29, 2033 *thirty years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.*

   c. *This instrument may be renewed. If renewed, the right-of-way shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.*

   d. *Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assignees, until they have fully satisfied the obligations*

and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. *Rental:*

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. *Terms and Conditions:*

   a. *This grant is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations Part 2800.*

   b. *This grant may be reviewed at any time deemed necessary by the authorized officer.*

   c. *This grant shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years.*

   d. *The map set forth in Exhibit A, attached hereto, is incorporated into and made a part of this grant instrument as fully and effectively as if it was set forth herein in its entirety.*

   e. *Failure of the holder to comply with applicable law or any provision of this grant shall constitute grounds for suspension or termination thereof.*

   f. *The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.*

   g. *The grant is subject to all valid rights existing on the effective date of the grant.*

   h. *The holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.*

   i. *In case of change of address, the holder shall immediately notify the authorized officer.*

   j. *Any cultural (historic or prehistoric site or object) or paleontological resource or Native American human remains, funerary items, sacred objects, or objects of cultural patrimony discovered by the permit holder, or any person working on their behalf, during the course of activities on federal land shall be immediately reported to the authorized officer by telephone, followed by written confirmation. The permit*

holder shall suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery can be made by the authorized officer.

For cultural resources other than Native American human remains, funerary items, sacred objects, or objects of cultural patrimony, this evaluation will determine the significance of the discovery and what mitigation measures are necessary to allow the activities to proceed. The holder is responsible for the cost of evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the authorized officer after consulting with the permit holder. Operations may resume only upon written authorization to proceed from the authorized officer.

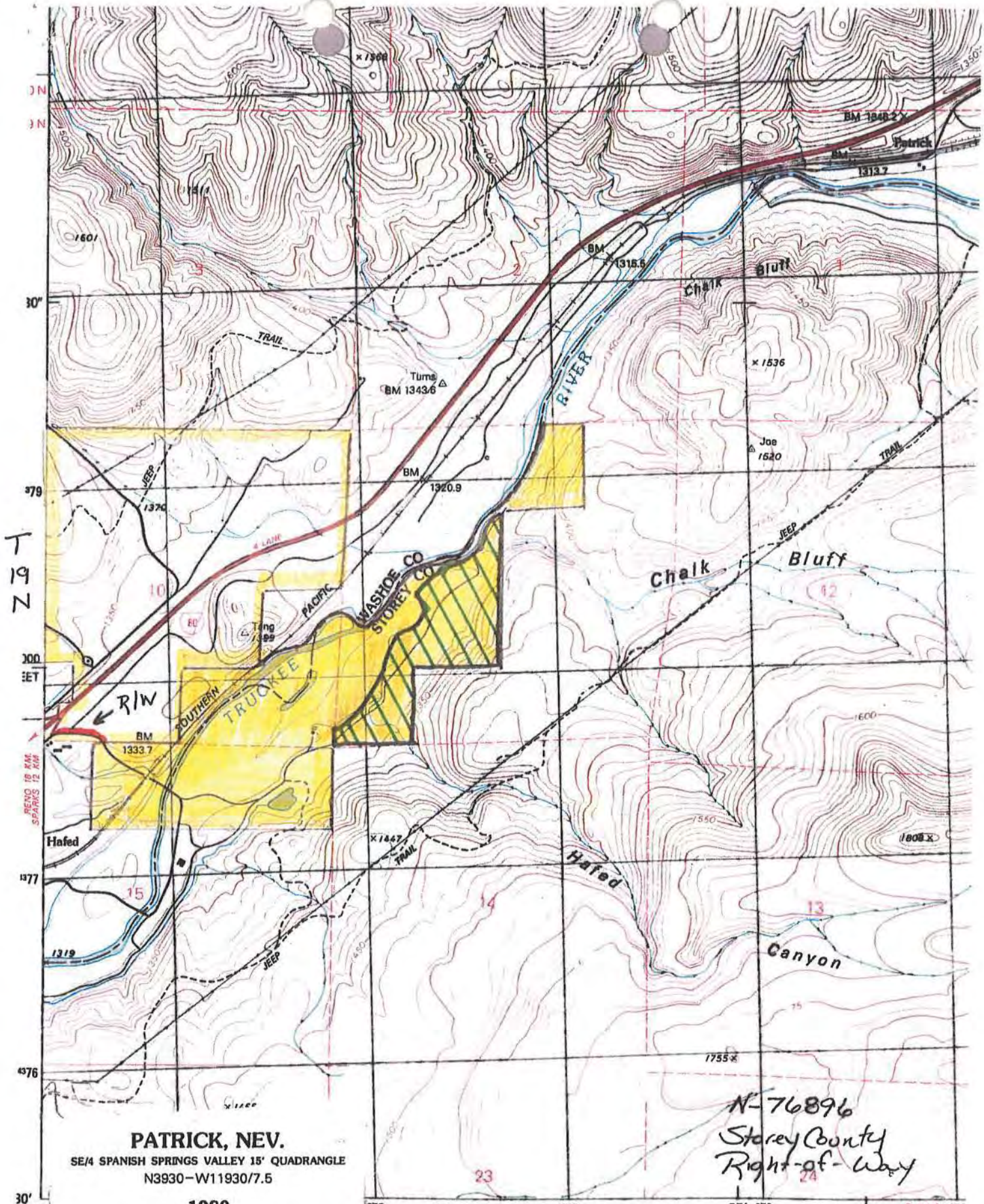
For Native American human remains, funerary items, sacred objects, or objects of cultural patrimony the permit holder must stop activities in the immediate vicinity of the discovery and protect it from your activities for 30 days or until notified to proceed by the authorized officer. The holder is responsible for the cost of consultation, evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the authorized officer after consulting with the permit holder.

k. *Construction sites shall be maintained in a sanitary condition at all times, waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, used petroleum products, ashes, and equipment.*

l. *Six months prior to termination of the grant, the holder shall contact the authorized officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination and rehabilitation plan. This plan shall include but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding. The authorized officer must approve the plan in writing prior to the holder's commencement of any termination activities.*

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant.

Bob Kirkham	Charles P. Pope
(Signature of Holder)	*(Signature of Authorized Officer)*
Chairman S.C. B of C	***Assistant Manager Nonrenewable Resources***
(Title)	*(Title)*
6/16/03	6/30/03
(Date)	*(Effective Date of Grant)*



PATRICK, NEV.

SE/4 SPANISH SPRINGS VALLEY 15' QUADRANGLE

N3930–W11930/7.5

1980

Produced by the United States Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs

EXHIBIT A

N↑

STANDARD FORM 299 (1/99)
Prescribed by DOI(USDA/DOT
P.L. 96-487 and Federal
Register Notice 5-22-95

APPLICATION FOR TRANSPORTATION AND UTILITY SYSTEMS AND FACILITIES ON FEDERAL LANDS

FORM APPROVED
OMB NO. 1004-0060
Expires: December 31, 2001

FOR AGENCY USE ONLY

Application Number: N-76896

Date filed: MAR 28 2003

NOTE: Before completing and filing the application, the applicant should completely review this package and schedule a preapplication meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application. Many times, with the help of the agency representative, the application can be completed at the preapplication meeting.

1. Name and address of applicant *(include zip code)*
Storey County
Board of Commissioners
P O Drawer 'D'
Virginia City NV 89440

2. Name, title, and address of authorized agent if different from Item 1 *(include zip code)*
Dean Haymore – Building/Planning
P O Box 526
Virginia City NV 89440

3. TELEPHONE (area code)
Applicant (775) 847-0968
Authorized Agent (775) 847-0966

4. As applicant are you? *(check one)*
- a. ☐ Individual
- b. ☐ Corporation*
- c. ☐ Partnership/Association*
- d. ☐ State Government/State Agency
- e. ☒ Local Government
- f. ☐ Federal Agency

* *If checked, complete supplemental page*

5. Specify what application is for: *(check one)*
- a. ☐ New authorization
- b. ☐ Renewing existing authorization No.
- c. ☐ Amend existing authorization No.
- d. ☐ Assign existing authorization No.
- e. ☒ Existing use for which no authorization has been received*
- f. ☐ Other*

* *If checked, provide details under Item 7*

6. If an individual or partnership are you a citizen(s) of the United States? ☒ Yes ☐ No

7. Project description *(describe in detail)*: (a) Type of system or facility, *(e.g., canal, pipeline, road)*; (b) related structures and facilities; (c) physical specifications *length, width, grading, etc.)*; (d) term of years needed; (e) time of year of use or operation; (f) Volume or amount of product to be transported; (g) duration and timing of construction; and (h) temporary work areas needed for construction *(Attach additional sheets, if additional space is needed.)*

The Storey County Board of Commissioners requests the right-of-way on Mustang Road from the I-80 exit frontage road which has been in existence since 1974. Said right-of-way, being 950 feet in length and 50 feet in width crossing the following described public land, Mount Diablo Meridian T.19N., R. 21 E., Sec. 10, S ½ S ½ SW ¼, was originally given to Joseph & Sally Conforte in 1974.

8. Attach a map covering area and show location of project proposal SEE EXHIBIT 'E' - PGS 1-4

9. State or local government approval: ☐ Attached ☐ Applied for ☒ Not required

10. Nonreturnable application fee: ☒ Attached ☒ Not required

11. Does project cross international boundary or affect international waterways? ☐ Yes ☒ No *(If "yes," indicate on map)*

12. Give statement of your technical and financial capability to construct, operate, maintain, and terminate system for which authorization is being requested.

Storey County has been maintaining this section of roadway since 1974. This and other right-of-ways on Mustang road are located in Washoe County. Both counties have government-funded road departments.

(Continued on page 2)

This form is authorized for local reproduction.

13a. Describe other reasonable alternative routes and modes considered. b. Why were these alternatives not selected?

There was one other road that crossed an at-grade crossing of the Union Pacific Railroad. This was shut down over 30 years ago as it was unsafe.

c. Give explanation as to why it is necessary to cross Federal Lands.

Access was shut down by Union Pacific for unsafe conditions.

14. List authorizations and pending applications filed for similar projects which may provide information to the authorizing agency. *(Specify number, date, code, or name)*

Appl N-42760---2800---(NV-033) Feb #, 1986 Joseph & Sally Conforte
3115 Sullivan Lane
Sparks NV 89431 (se attached)

15. Provide statement of need for project, including the economic feasibility and items such as: (a) cost of proposal *(construction, operation, and maintenance)*; (b) estimated cost of next best alternative; and (c) expected public benefits.

This roadway has been in use since 1974. There should not be any added cost for construction. However, there will be ongoing costs for maintenance. This is a major public benefit that has provided access to this area for 30 years and will be the main access for the regional landfill.

16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.

There will be no adverse effect on the population in the area. The rural lifestyle will not be affected.

17. Describe likely environmental effects that the proposed project will have on: (a) air quality; (b) visual impact; (c) surface and ground water quality and quantity; (d) the control or structural change on any stream or other body of water; (e) existing noise levels; and (f) the surface of the land, including vegetation, pennafrost, soil, and soil stability.

Any changes that might effect the environment have been occurring over that last 30 years. We do not anticipate any further changes.

18. Describe the probable effects that the proposed project will have on (a) populations offish, plant-life, wildlife, and marine life, including threatened and endangered species; and (b) marine mammals, including hunting, capturing, collecting, or killing these animals.

There will be no effects on populations of fish, plant-life, wildlife, including threatened and endangered species.

19. State whether any hazardous material, as defined in this paragraph, will be used, produced, transported or stored on or within the right-of-way or any of the right-of-way facilities, or used in the construction, operation, maintenance or termination of the right-of-way or any of its facilities. "Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 V.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 V.S.C. 9601 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 V.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 V.S.C. 9601(14), nor does the term include natural gas.

This is and will be a public access to and from a Class 1 regional landfill. Class 1 landfills are not permitted to accept "Hazardous Materials".

20. Name all the Department(s)/Agency(ies) where this application is being filed.

Bureau of Land Management

I HEREBY CERTIFY, That I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

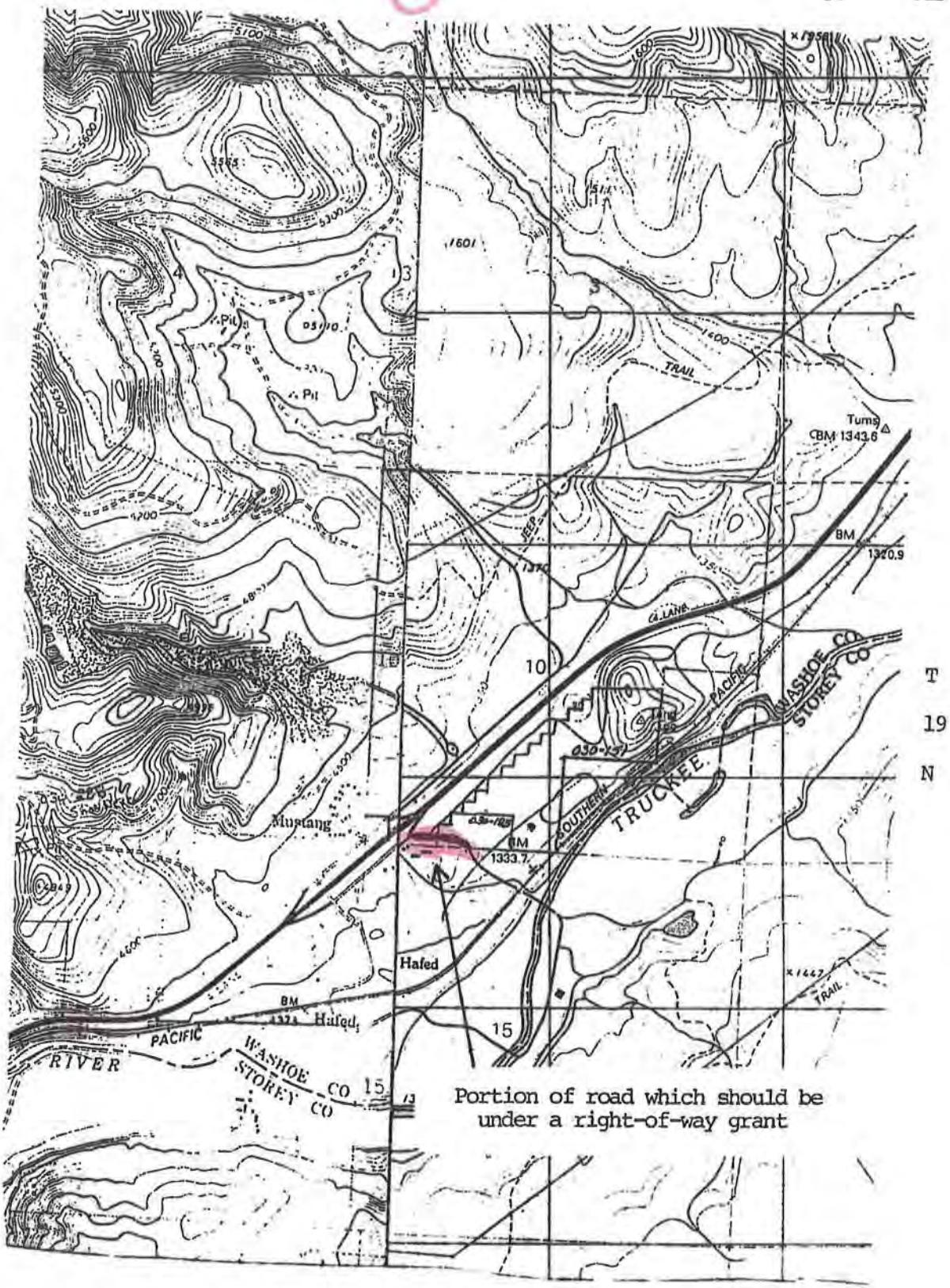
Signature of Applicant

Date 24 March 2003

Title 18, U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

Copy

N 42760



R 21 E

Mustang area - Vista and Patrick 7.5' USGS quads

T 19N R 21E S½S½SW Sect. 10

ATTACHMENT J

Document #388086, Deed Dedicating Land for Public Use (Recorded in Washoe County, December 9, 1975)

388086

DEED DEDICATING LAND FOR PUBLIC USES

THIS DEED made the 28th day of October, 1975, between JOSEPH CONFORTE and SALLY CONFORTE, his wife, of the County of Washoe, State of Nevada, herein referred to as the "Dedicators", and THE COUNTY OF STOREY, STATE OF NEVADA, acting by and through its Board of County Commissioners, herein referred to as "Dedicatee",

Dedicators, in consideration of One Dollar ($1.00) to them paid by Dedicatee, do hereby dedicate, release, remise and quitclaim to Dedicatee, to have and to hold for the public use forever, all that certain land described in Exhibit "A" attached hereto.

The land so described in Exhibit "A" is hereby dedicated for the purpose of a public roadway and it is a condition of this conveyance that it shall not be sold by Dedicatees, but shall be kept, maintained and used perpetually only for such purpose. If any part of the property herein dedicated shall not be used and maintained as a public roadway, or if any part shall cease to be used and maintained as a public roadway, or if any part shall be used for any purpose inconsistent with such purpose, then all the right, title and interest in and to the property and to the improvements thereon, shall revert to and reinvest in Dedicators, or to the survivor thereof, or the heirs and assigns of such survivor, as fully and completely as if this instrument had not been executed.

Dedicatee, by accepting this dedication, obligates itself to forever preserve and use the above described land for the purpose listed above, and no other.

DATED at Washoe County, Nevada, this 28th day of October, 1975.

Joe Conforte
JOSEPH CONFORTE

Sally Conforte
SALLY CONFORTE

388086

BOOK 935 PAGE 601

DEC 9 1975

District Attorney's Office, Storey County, Virginia City, Nevada

STATE OF NEVADA)
) ss:
WASHOE COUNTY)

On this 22nd day of October, 1975, personally appeared before me, a Notary Public, JOSEPH CONFORTE and SALLY CONFORTE, who acknowledged to me that they executed the above Deed Dedicating Land for Public Use.

Notary Public

STANLEY H. BROWN
Notary Public State of Nevada
Washoe County
My Commission Expires Jan. 21, 1976

BOOK 935 PAGE 602

388086

EXHIBIT "A"

The following real property which describes the centerline of a roadway easement 50 feet in width, together therewith an adjoining 15 foot easement for slope construction and maintenance purposes, being contained entirely within the NE 1/4 of the NW 1/4 of Section 15, T19N, R21E, M.D.B. & M., Washoe County, Nevada, and being more particularly described as follows:

Commencing at the north one-quarter corner of said Section 15 and proceeding along the northerly line of said section N 89° 46' 05" W 1203.09 feet to the true point of beginning, said point being on a curve to the right, the tangent of which bears S 37° 57' 01" E.

Thence proceeding along said curve having a central angle of 4° 00' 16", a radius of 300.00 feet, through an arc length of 20.97 feet.

Thence S 33° 56' 45" E 165.92 feet to the beginning of a curve to the left, the tangent of which bears the last described course.

Thence along said curve having a central angle of 34° 46' 20", a radius of 500.00 feet, through an arc length of 303.44 feet.

Thence S 68° 43' 05" E 281.50 feet to the beginning of a curve to the right, the tangent of which bears the last described course.

Thence along said curve having a central angle of 16° 03' 36", a radius of 496.19 feet, through an arc length of 139.08 feet.

Thence S 52° 39' 29" E 465.00 feet, more or less, to the Truckee River, said point being the point of ending.

Reserving therefrom the Southern Pacific Railroad right-of-way and subject to a Southern Pacific pipe line easement, also subject to and together with easements and reservations of record.

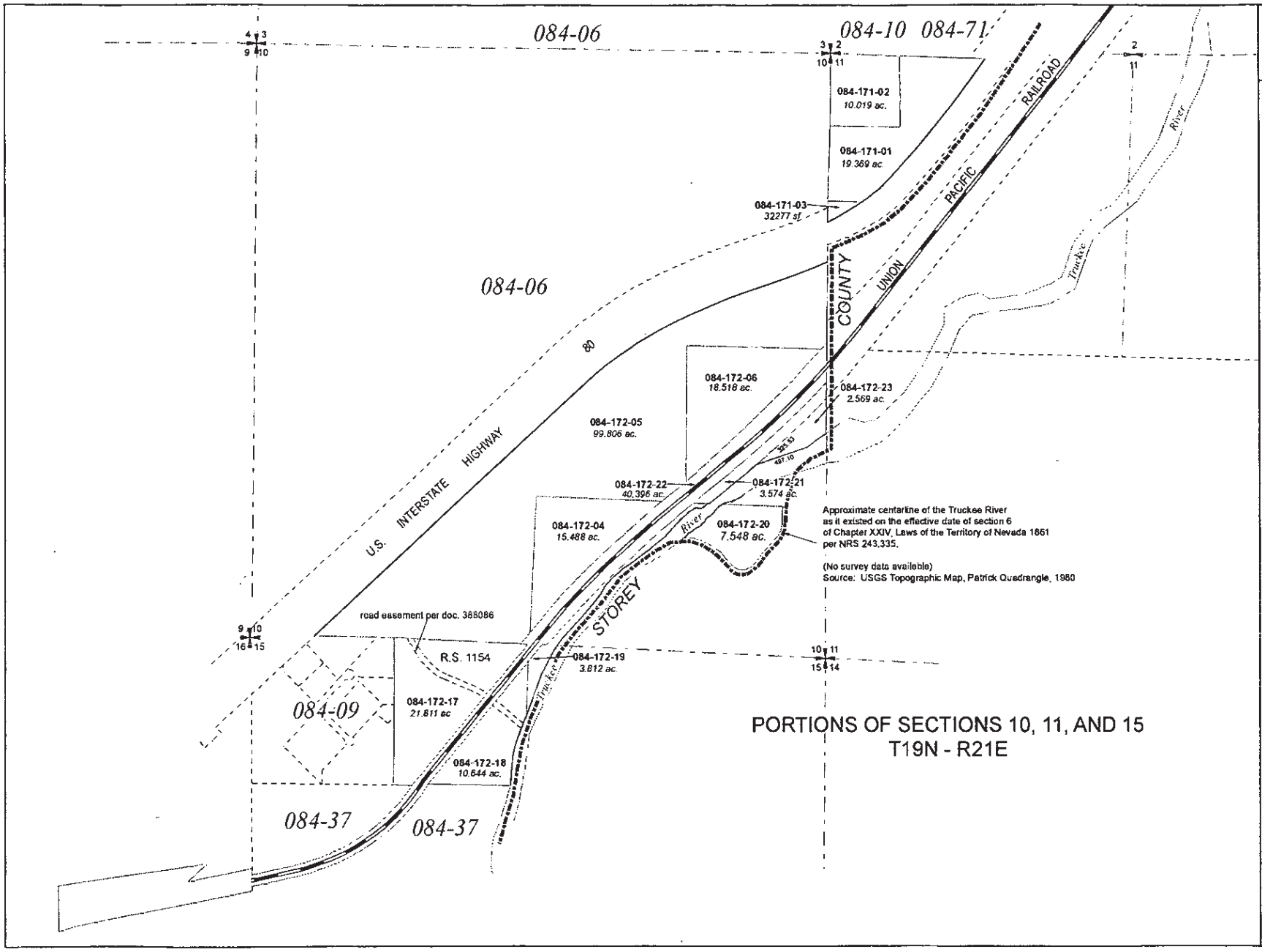
BASIS OF BEARINGS: Frontage road centerline, i.e., S 83° 17' 15" E (State of Nevada Department of Highways).

388086

OFFICIAL RECORDS
WASHOE COUNTY, NEV.
RECORD REQUESTED BY
Storey County Dist. Atty
DEC 9 11 02 AM '75
ARDIS BROWN
COUNTY RECORDER
NO FEE — DEP

LAW OFFICES
BROWN & ALBRIGHT
CHARTERED
A PROFESSIONAL CORPORATION
147 EAST LIBERTY STREET
RENO, NEVADA 89501

BOOK 935 PAGE 293



Assessor's Map Number

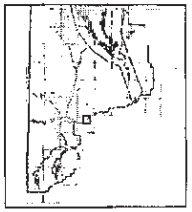
084-17

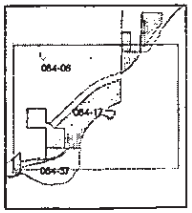
STATE OF NEVADA
WASHOE COUNTY
ASSESSOR'S OFFICE
Joshua G. Wilson, Assessor

1001 East Ninth Street
Building D
Reno, Nevada 89512
(775) 328-2231

Feet
0 200 400 600 800

1 inch = 800 feet





created by: CFB 07/24/2014

last updated:

area previously shown on map(s)

NOTE: This map was prepared for the use of the Washoe County Assessor for assessment and illustrative purposes only. It does not represent a survey of the premises. No liability is assumed as to the sufficiency or accuracy of the data delineated hereon.

ATTACHMENT K

United State Department of the Interior Bureau of Land Management Right-of-Way Grant, Serial Number N-77824 (Issued to Truckee Canyon Properties for Access to Private Land, executed January 14, 2004)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Carson City Field Office
5665 Morgan Mill Rd.
Carson City, NV 89701
(775) 885-6000

In Reply Refer To:
N-77824
2800
(NV-03300)

CERTIFIED MAIL 7002 2410 0005 6671 0362

JAN 15 2004

K. Bart Hiatt
Truckee Canyon Properties
1200 Auction Road
Fallon, NV 89406

Dear Mr. Hiatt:

Enclosed is the executed copy of Right-of-Way Grant N-77824. Rental and the monitoring fee totaling $84.70 was received in this office on January 9, 2004.

Sincerely,

Charles P. Pope
Assistant Manager, Non-renewable Resources
Carson City Field Office

Enclosure:
1. Right-of-Way Grant

FORM 2800-14
(August, 1985)

Issuing Office
Carson City Field Office

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT
SERIAL NUMBER N-77824

1. A right-of-way is hereby granted pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).

2. Nature of Interest:

a. By this instrument, the holder:

Truckee Canyon Properties
1200 Auction Road
Fallon, NV 89406

receives a right to construct, operate, maintain, and terminate an access road across public lands described as follows:

Mount Diablo Meridian

T. 19 N., R. 21 E.,
sec. 15, NE¼NW¼.

The right-of-way area granted herein is 30 feet wide, 736 feet long, containing 0.51 acres, more or less.

b. This instrument shall terminate on January 13, 2034 thirty years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

c. This instrument may be renewed. If renewed, the right-of-way shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

d. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assignees, until they have fully satisfied the obligations

and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

2. *Rental:*

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

3. *Terms and Conditions:*

   a. *This grant is issued subject to the holder 's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations Part 2800.*

   b. *This grant may be reviewed at any time deemed necessary by the authorized officer.*

   c. *This grant shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years.*

   d. *The maps set forth in Exhibits A and B, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in its entirety.*

   e. *Failure of the holder to comply with applicable law or any provision of this grant shall constitute grounds for suspension or termination thereof.*

   f. *The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.*

   g. *The grant is subject to all valid rights existing on the effective date of the grant.*

   h. *The holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.*

   i. *In case of change of address, the holder shall immediately notify the authorized officer.*

   j. *Any cultural (historic or prehistoric site or object) or paleontological resource or Native American human remains, funerary items, sacred objects, or objects of*

cultural patrimony discovered by the permit holder, or any person working on their behalf, during the course of activities on federal land shall be immediately reported to the authorized officer by telephone, followed by written confirmation. The permit holder shall suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery can be made by the authorized officer.

For cultural resources other than Native American human remains, funerary items, sacred objects, or objects of cultural patrimony, this evaluation will determine the significance of the discovery and what mitigation measures are necessary to allow the activities to proceed. The holder is responsible for the cost of evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the authorized officer after consulting with the permit holder. Operations may resume only upon written authorization to proceed from the authorized officer.

For Native American human remains, funerary items, sacred objects, or objects of cultural patrimony the permit holder must stop activities in the immediate vicinity of the discovery and protect it from your activities for 30 days or until notified to proceed by the authorized officer. The holder is responsible for the cost of consultation, evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the authorized officer after consulting with the permit holder.

k. *Construction sites shall be maintained in a sanitary condition at all times, waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, used petroleum products, ashes, and equipment.*

l. *The holder shall not utilize the road authorized by this right-of-way grant for access to a brothel.*

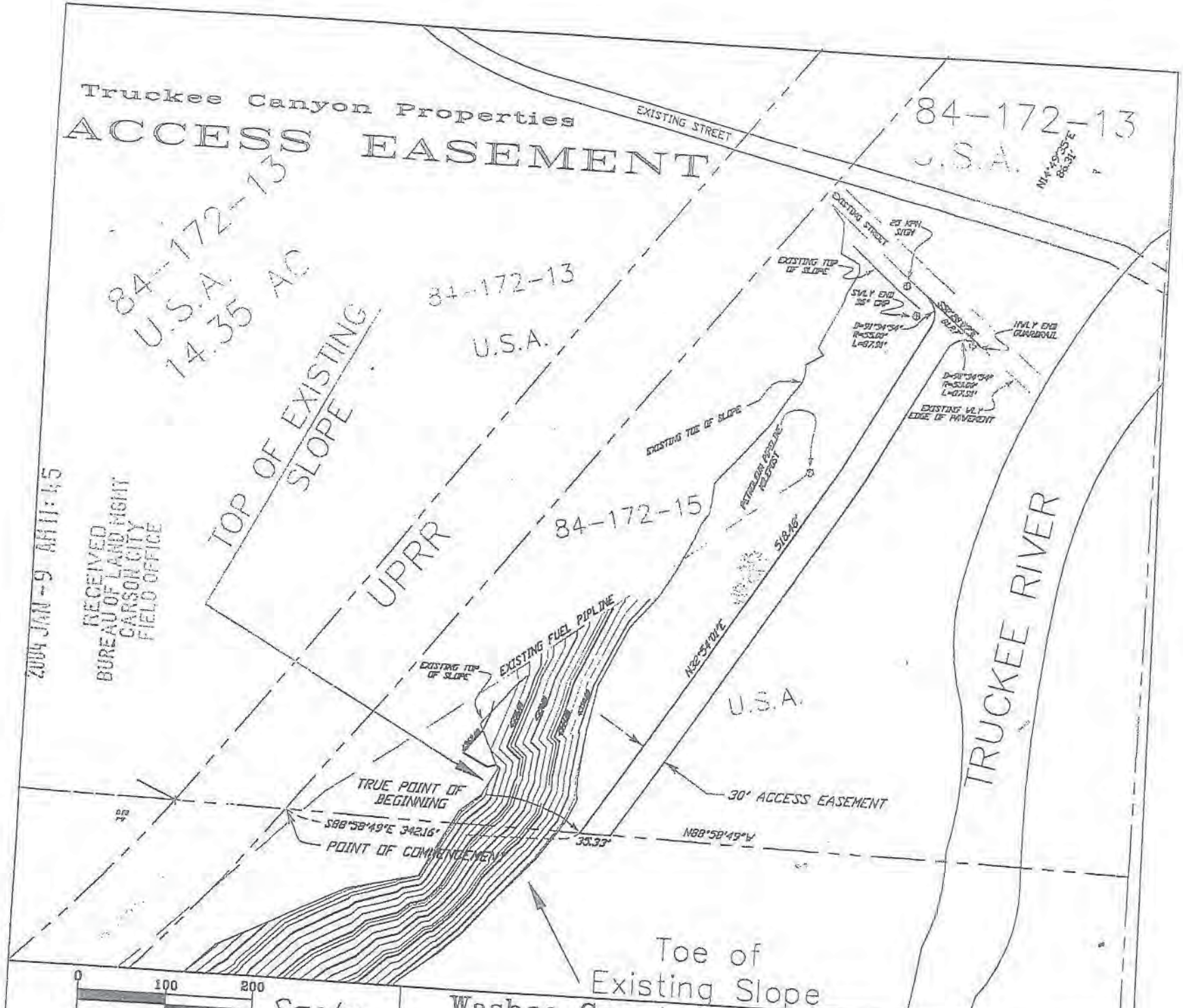
m. *Six months prior to termination of the grant, the holder shall contact the authorized officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination and rehabilitation plan. This plan shall include but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding. The authorized officer must approve the plan in writing prior to the holder's commencement of any termination activities.*

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant.

(Signature of Holder)	(Signature of Authorized Officer)
Managing Member	Assistant Manager Nonrenewable Resources
(Title)	(Title)
1/8/04	1/14/04
(Date)	(Effective Date of Grant)

Truckee Canyon Properties

ACCESS EASEMENT



RECEIVED
BUREAU OF LAND MGMT
CARSON CITY
FIELD OFFICE
2004 JAN -9 AM 11:45

Washoe County, Nevada
Proposed Access Easement

Truckee Canyon Properties
Nov. 7, 2003
File: Mustang_Easement.dwg

EXHIBIT B

DRAINAGE REPORT

FOR

MUSTANG INDUSTRIAL DEVELOPMENT

Washoe County, Nevada

APN
084-370-02

Prepared for:

Scannell Properties
821 Meander Court, Suite 200
Medina, MN 55340

Prepared by:

TECTONICS DESIGN GROUP

10451 Double R Blvd.
Reno, Nevada 89521

February 17, 2015
Job Number: 14217

TABLE OF CONTENTS

1. GENERAL LOCATION AND DEVELOPMENT DESCRIPTION

A.	SITE LOCATION	Page 2
B.	DESCRIPTION OF PROPERTY	Page 2
C.	PROJECT DESCRIPTION	Page 2

2. DRAINAGE BASIN DESCRIPTION — Page 2

A.	DRAINAGE DESCRIPTION	Page 2
B.	FLOODPLAIN INFORMATION	Page 2

3. PROPOSED DRAINAGE FACILITIES — Page 3

A.	COMPLIANCE WITH REGULATIONS AND ADOPTED PLANS	Page 3
B.	HYDROLOGIC CRITERIA	Page 3
C.	FACILITY DESIGN CALCULATIONS	Page 4

4. CONCLUSION — Page 4

EXHIBITS

EX-1	VICINITY MAP
EX-2	DEVELOPED BASIN MAP
EX-3	FEMA MAP
EX-4	FEMA MAP
EX-5	SLOPE MAP

APPENDIX

A	REGIONAL DRAINAGE CRITERIA
B	EXISTING BASIN CALCULATIONS
C	DEVELOPED BASIN CALCULATIONS
D	DETENTION BASIN CALCULATIONS

INTRODUCTION

LOCATION OF PROPERTY

The Mustang Industrial Development is a proposed development located on a vacant parcel of land off the Mustang Road Exist east of Sparks on Interstate 80. The parcel is bound by the UP Railroad to the north and the Truckee River to the south. Please see attached site plan for location. The site is approximately 117.76 acres with an APN of 084-370-02. The project is located in portions of Section 15 & 16, Township 19 North, Range 21 East, Mount Diablo Meridian in Washoe County, Nevada. See Exhibit 1 for a general Vicinity Map.

DESCRIPTION OF PROPERTY

The site is presently undeveloped land with the slope falling from the north side of the site to the river along the south side of the property. The undisturbed area of the site is sparsely populated with small weeds and sagebrush up to 2 feet in height.

PROJECT DESCRIPTION

Scannell Properties is proposing to develop a 117-acre parcel in the Truckee Canyon area of Washoe County, Nevada, near the intersection of Interstate 80 and Mustang Road. The site is bound by the Truckee River to the south and the Union Pacific Railroad to the north. The current zoning, Industrial, allows for the proposed use which includes two light industrial buildings that will be approximately 344,000 square feet and 517,000 square feet. Site development will be supported by infrastructure improvements including the construction of a new road from Mustang Road, a water main extension from the north, on-site sewer collection and treatment, and stormwater ponds to collect runoff. The project is expected to begin late-summer of 2015.

DRAINAGE BASIN DESCRIPTION

DRAINAGE DESCRIPTION

The entire site is being planned for development, as per Exhibit 2 attached, our site has been divided into five separate detention basin areas. All site drainage will be routed to each of these basins, each basin has been designed to meet the Washoe County LID standards for water quality and will treat the runoff before being allowed to be discharged back into the natural drainage way.

FLOODPLAIN INFORMATION

The project site lies in both Flood Zone AE and X. This information is based on the FEMA Flood Insurance Rate Map No. 32031C3069G and 32031C3088G, dated March 16, 2009 for Washoe County, Nevada. Flood Zone AE is defined as base floodplain where base flood elevations are provided. Flood Zone X is defined as "Areas determined to be outside the 500 year flood plain". Please see Exhibit 4 for the FEMA Map.

PROPOSED DRAINAGE FACILITIES

COMPLIANCE WITH REGULATIONS AND ADOPTED PLANS

The design criteria which has been used for this drainage report is in compliance with the Washoe County design guidelines, Article 438 Grading Standards.

HYDROLOGIC CRITERIA

The following design criteria assumptions were used for this analysis:

- Design for on-site facilities is based upon the 100 year storm event.
- Rainfall intensity/duration frequencies were obtained from the Washoe County, NV NOAA Atlas 14 Point Precipitation Frequency (Please see Appendix A)
- Runoff coefficients were obtained from Table 7-7 of the Rational Method QTR-55 Software Program distributed by Hasted Methods.

METHODOLOGY

The rational method was used to determine the peak flows. The parameters for this method are:

1. The drainage area (A, acres)
2. Time of Concentration (T_c, minutes)
3. Runoff Coefficient (C)
4. Rainfall Intensity (i, inches per hour)

The time of concentration is calculated based on the equation:

T_c=10 min or L/(Vx60), whichever is greater,

where

L=The travel distance in feet
V=Channel or overland velocity in feet per second

Due to the relatively small size of the site and sub areas and the high runoff potential within commercial developments, the minimum T_c of 10 minutes was used in this analysis.

Rainfall intensity/duration frequencies were obtained from the NOAA Atlas 14 Point Precipitation Frequency IDF Curve. For T_c=10 min., the rainfall intensities are i_{25}=2.39 in/hr and i_{100}=3.57 in/hr.

From the Public Works Design Manual (See Appendix A), the following runoff coefficients were used:

Developed C=0.90
Undeveloped C=0.45

The peak runoff is calculated using the following equation: Q=CiA

FACILITY DESIGN CALCULATIONS

ON-SITE DRAINAGE CALCULATIONS

Our proposed project will have an on-site storm drainage system consisting of four separate detention pond areas. These areas will have multiple sub basins within each basin but for summary purposes they will be lumped together. Table's 1 and 2 show the net increase in flow due to the development and the detention/retention/retention basin required sizing. All calculations can be found in Appendix B, C and D.

Table 1 - Peak Basin Flow Summary
25 & 100-Year Frequency

	Existing 25Yr(cfs)	Developed 25 Yr(cfs)	Net Increase (cfs)	Existing 100Yr(cfs)	Developed 100Yr(cfs)	Net Increase (cfs)
Basin						
Basin 1	10.04	20.20	10.16	14.96	30.18	15.22
Basin 2	7.81	18.01	10.20	11.63	26.89	15.26
Basin 3	46.16	95.35	49.19	68.78	142.42	73.64
Basin 4	14.10	26.47	12.37	21.00	39.53	18.53

Table 2 - Basin Volume Summary
25 & 100-Year Frequency

	100 yr Volume Required (cf)	Volume Provided (cf)
Basin 1	9,674	10,500
Basin 2	9,927	10,500
Basin 3	47,023	47,500
Basin 4	11,633	12,000

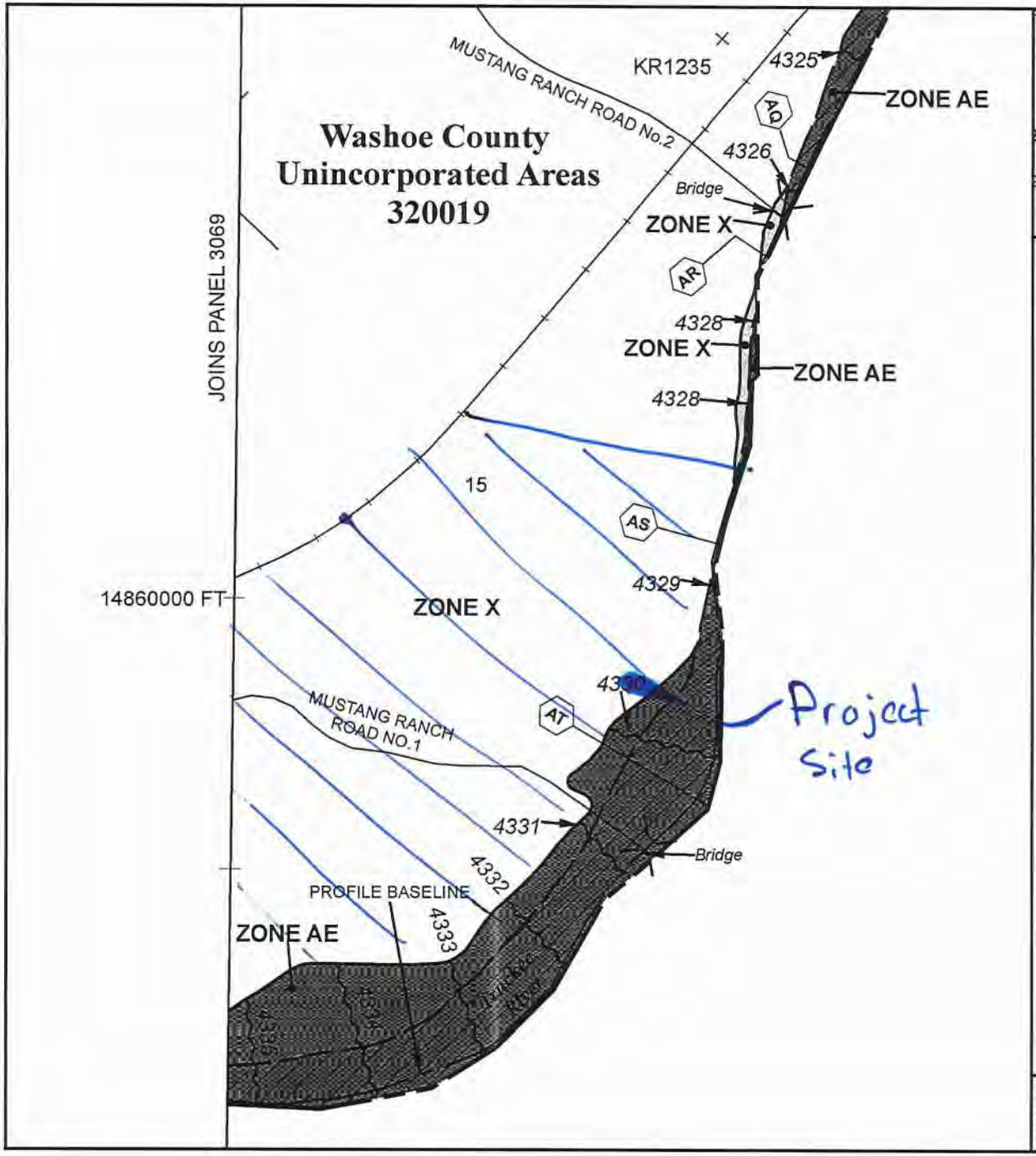
CONCLUSION

All designed storm drain and flood control facilities are effective in controlling storm runoff and have no impact on existing off-site facilities. Therefore, no mitigation of impacts is required. In addition, the storm drain and flood control facilities are in compliance with the following:

- FEMA requirements - No buildings are proposed within the existing or proposed 100-year flood plain boundaries.
- Drainage Laws – As designed, the drainage system shall promote and preserve the general health, welfare, and economic being of the region.

- The designed facilities are consistent with and integrated with the Washoe County Drainage Master Plan.
- All storm drain and flood control improvements have been designed to meet or exceed the design standards as set forth in the overall Washoe County Master Drainage Plan and in compliance with the Washoe County design guidelines, Article 438 Grading Standards.

EXHIBITS



MAP SCALE 1" = 500'

250 0 500 1000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3088G

FIRM

FLOOD INSURANCE RATE MAP

WASHOE COUNTY, NEVADA
AND INCORPORATED AREAS

PANEL 3088 OF 3475

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WASHOE COUNTY	320019	3088	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

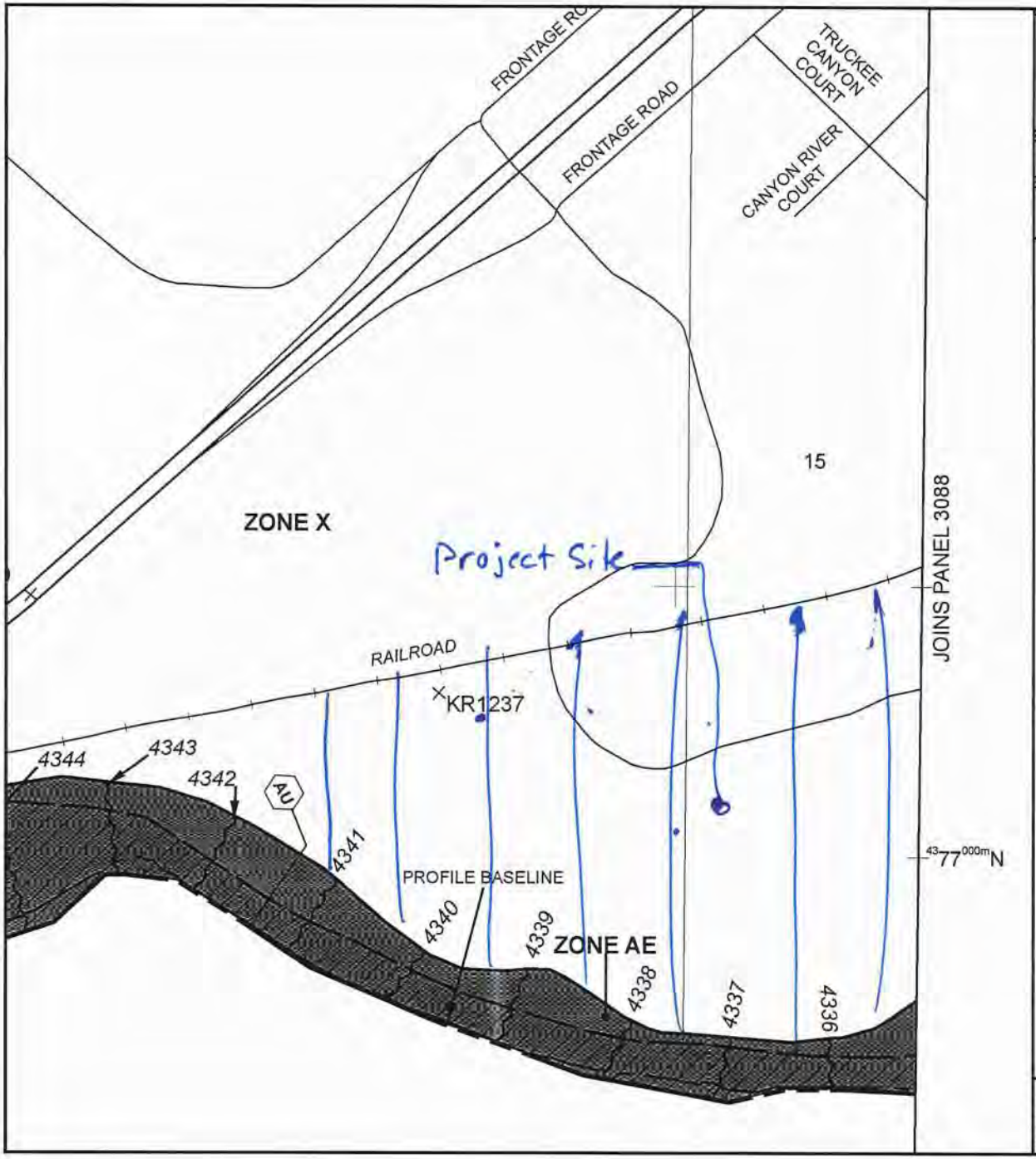
MAP NUMBER
32031C3088G

MAP REVISED
MARCH 16, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

EX-3



ational Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3069G

FIRM

FLOOD INSURANCE RATE MAP

WASHOE COUNTY, NEVADA
AND INCORPORATED AREAS

PANEL 3069 OF 3475

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WASHOE COUNTY	320019	3069	G

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MAP REVISED
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EX-4

APPENDIX A

REGIONAL
DRAINAGE CRITERIA

NOAA Atlas 14, Volume 1, Version 5
Location name: Sparks, Nevada, US*
Latitude: 39.5090°, Longitude: -119.6215°
Elevation: 4462 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF tabular | PF graphical | Maps & aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.15 (0.960-1.33)	1.43 (1.21-1.69)	1.92 (1.62-2.28)	2.38 (1.99-2.84)	3.14 (2.57-3.79)	3.85 (3.05-4.69)	4.69 (3.60-5.80)	5.71 (4.21-7.19)	7.37 (5.10-9.55)	8.88 (5.87-11.8)
10-min	0.870 (0.732-1.01)	1.09 (0.918-1.28)	1.46 (1.24-1.73)	1.81 (1.52-2.17)	2.39 (1.96-2.89)	2.93 (2.32-3.57)	3.57 (2.74-4.40)	4.35 (3.20-5.47)	5.60 (3.89-7.27)	6.76 (4.46-8.95)
15-min	0.720 (0.604-0.840)	0.900 (0.760-1.06)	1.21 (1.02-1.44)	1.50 (1.26-1.79)	1.98 (1.62-2.38)	2.42 (1.92-2.95)	2.95 (2.26-3.64)	3.59 (2.65-4.52)	4.63 (3.21-6.01)	5.58 (3.69-7.40)
30-min	0.486 (0.408-0.566)	0.604 (0.512-0.714)	0.812 (0.686-0.966)	1.01 (0.846-1.20)	1.33 (1.09-1.60)	1.63 (1.29-1.99)	1.99 (1.52-2.45)	2.42 (1.78-3.04)	3.12 (2.16-4.05)	3.76 (2.48-4.98)
60-min	0.301 (0.252-0.350)	0.374 (0.316-0.442)	0.503 (0.425-0.598)	0.623 (0.523-0.744)	0.824 (0.674-0.993)	1.01 (0.800-1.23)	1.23 (0.944-1.52)	1.50 (1.10-1.88)	1.93 (1.34-2.50)	2.33 (1.54-3.08)
2-hr	0.198 (0.173-0.230)	0.246 (0.216-0.288)	0.318 (0.276-0.372)	0.380 (0.325-0.443)	0.474 (0.394-0.557)	0.558 (0.453-0.664)	0.656 (0.518-0.790)	0.777 (0.595-0.950)	0.993 (0.727-1.26)	1.19 (0.844-1.55)
3-hr	0.157 (0.139-0.180)	0.196 (0.175-0.226)	0.248 (0.218-0.285)	0.289 (0.252-0.333)	0.348 (0.298-0.403)	0.399 (0.336-0.468)	0.461 (0.380-0.546)	0.541 (0.436-0.651)	0.680 (0.532-0.847)	0.809 (0.617-1.04)
6-hr	0.110 (0.097-0.125)	0.138 (0.122-0.157)	0.172 (0.151-0.196)	0.198 (0.174-0.226)	0.233 (0.202-0.268)	0.260 (0.221-0.301)	0.287 (0.241-0.336)	0.321 (0.264-0.380)	0.376 (0.303-0.453)	0.433 (0.342-0.530)
12-hr	0.072 (0.064-0.081)	0.090 (0.080-0.102)	0.115 (0.101-0.130)	0.134 (0.117-0.151)	0.159 (0.137-0.182)	0.178 (0.152-0.205)	0.198 (0.167-0.231)	0.218 (0.180-0.257)	0.244 (0.196-0.294)	0.267 (0.210-0.327)
24-hr	0.045 (0.040-0.050)	0.056 (0.051-0.063)	0.072 (0.065-0.080)	0.084 (0.075-0.094)	0.101 (0.090-0.114)	0.115 (0.102-0.129)	0.130 (0.113-0.146)	0.144 (0.125-0.164)	0.165 (0.141-0.189)	0.182 (0.152-0.210)
2-day	0.027 (0.024-0.030)	0.034 (0.030-0.038)	0.043 (0.038-0.049)	0.051 (0.045-0.057)	0.062 (0.054-0.070)	0.070 (0.061-0.080)	0.079 (0.068-0.091)	0.089 (0.076-0.103)	0.102 (0.085-0.120)	0.113 (0.093-0.134)
3-day	0.019 (0.017-0.022)	0.025 (0.022-0.028)	0.032 (0.028-0.036)	0.038 (0.033-0.043)	0.046 (0.040-0.052)	0.053 (0.046-0.060)	0.060 (0.052-0.069)	0.068 (0.058-0.078)	0.079 (0.065-0.092)	0.087 (0.071-0.103)
4-day	0.016 (0.014-0.018)	0.020 (0.018-0.023)	0.026 (0.023-0.030)	0.031 (0.028-0.035)	0.038 (0.034-0.044)	0.044 (0.038-0.050)	0.051 (0.043-0.058)	0.057 (0.049-0.066)	0.067 (0.055-0.077)	0.074 (0.061-0.087)
7-day	0.011 (0.009-0.012)	0.014 (0.012-0.015)	0.018 (0.016-0.020)	0.021 (0.019-0.024)	0.026 (0.023-0.030)	0.030 (0.026-0.035)	0.034 (0.029-0.040)	0.039 (0.033-0.045)	0.045 (0.037-0.053)	0.050 (0.041-0.059)
10-day	0.008 (0.007-0.010)	0.011 (0.009-0.012)	0.014 (0.012-0.016)	0.017 (0.015-0.019)	0.020 (0.018-0.023)	0.023 (0.020-0.027)	0.027 (0.023-0.031)	0.030 (0.025-0.035)	0.034 (0.029-0.040)	0.038 (0.031-0.045)
20-day	0.005 (0.005-0.006)	0.007 (0.006-0.007)	0.009 (0.008-0.010)	0.010 (0.009-0.012)	0.012 (0.011-0.014)	0.014 (0.012-0.016)	0.016 (0.013-0.018)	0.017 (0.015-0.020)	0.020 (0.017-0.023)	0.022 (0.018-0.025)
30-day	0.004 (0.003-0.004)	0.005 (0.004-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.011 (0.009-0.012)	0.012 (0.010-0.014)	0.013 (0.011-0.015)	0.015 (0.013-0.017)	0.016 (0.014-0.019)
45-day	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.010 (0.009-0.012)	0.011 (0.010-0.013)	0.012 (0.010-0.014)
60-day	0.003 (0.002-0.003)	0.003 (0.003-0.004)	0.005 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.008 (0.007-0.010)	0.009 (0.008-0.011)	0.010 (0.008-0.011)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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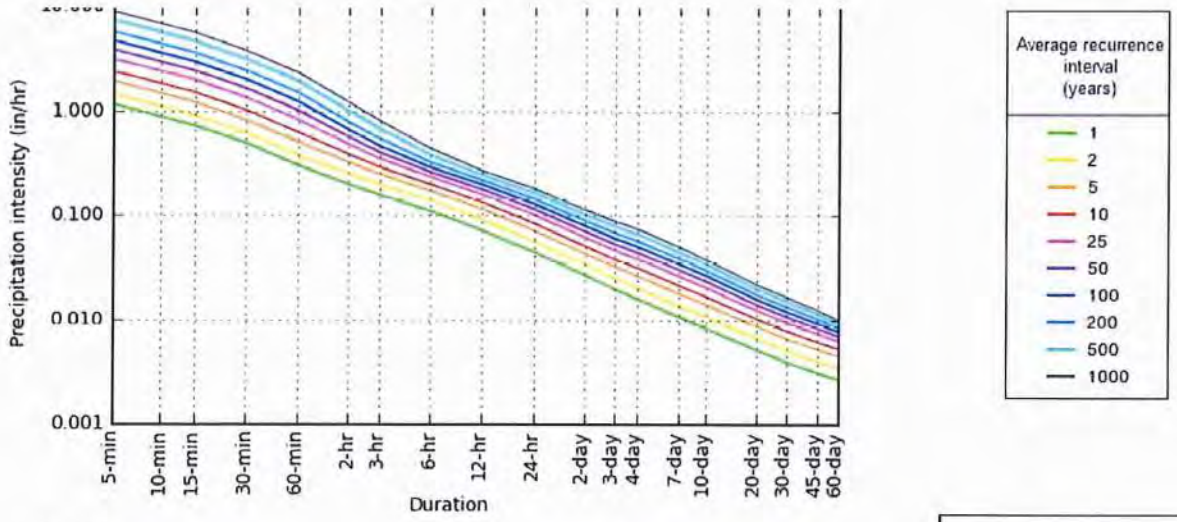
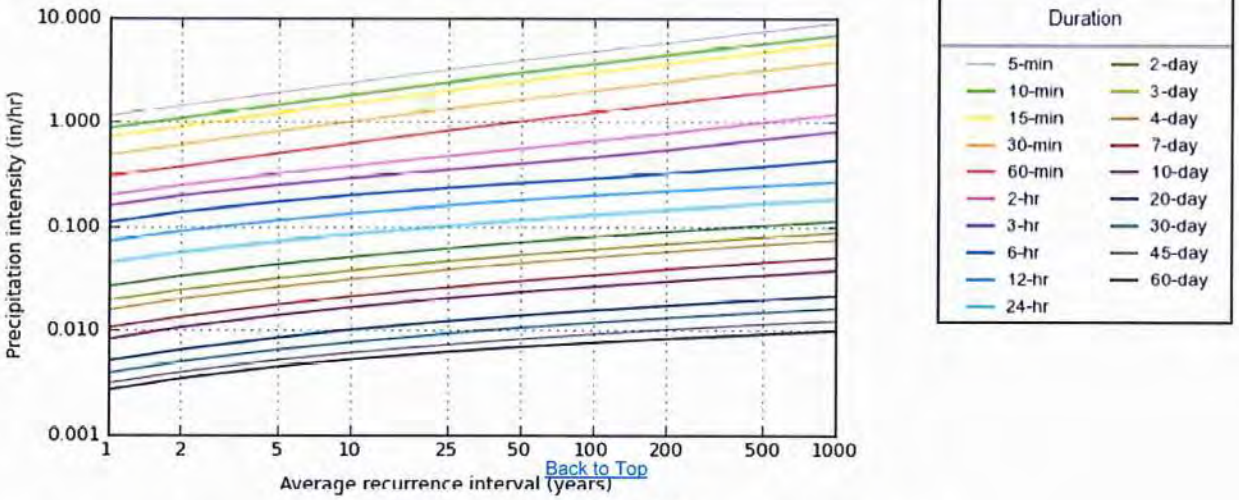
PF graphical





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Maps & aerials

NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Fri Jan 9 16:59:53 2015

Small scale terrain

APPENDIX B

EXISTING BASIN CALCULATIONS

Quick TR-55 Ver.5.46 S/N:
Executed: 13:14:24 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	11.27						
			15.00	0.450	0.450	1.500	11.27	7.61

Quick TR-55 Ver.5.46 S/N:
Executed: 13:14:24 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	11.27						
			15.00	0.450	0.450	1.980	11.27	10.04

Quick TR-55 Ver.5.46 S/N:
Executed: 13:14:24 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	11.27						
			15.00	0.450	0.450	2.950	11.27	14.96

Quick TR-55 Ver.5.46 S/N:
Executed: 13:14:55 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	8.76						
			15.00	0.450	0.450	1.500	8.76	5.91

Quick TR-55 Ver.5.46 S/N:
Executed: 13:14:55 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	8.76						
			15.00	0.450	0.450	1.980	8.76	7.81

Quick TR-55 Ver.5.46 S/N:
Executed: 13:14:55 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	8.76						
			15.00	0.450	0.450	2.950	8.76	11.63

Quick TR-55 Ver.5.46 S/N:
Executed: 13:15:31 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	51.81						
			15.00	0.450	0.450	1.500	51.81	34.97

Quick TR-55 Ver.5.46 S/N:
Executed: 13:15:31 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	51.81						
			15.00	0.450	0.450	1.980	51.81	46.16

Quick TR-55 Ver.5.46 S/N:
Executed: 13:15:31 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	51.81						
			15.00	0.450	0.450	2.950	51.81	68.78

Quick TR-55 Ver.5.46 S/N:
Executed: 13:15:56 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	15.82						
			15.00	0.450	0.450	1.500	15.82	10.68

Quick TR-55 Ver.5.46 S/N:
Executed: 13:15:56 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	15.82						
			15.00	0.450	0.450	1.980	15.82	14.10

Quick TR-55 Ver.5.46 S/N:
Executed: 13:15:56 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	15.82						
			15.00	0.450	0.450	2.950	15.82	21.00

Quick TR-55 Ver.5.46 S/N:
Executed: 13:16:25 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 5

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	30.08						
			15.00	0.450	0.450	1.500	30.08	20.30

Quick TR-55 Ver.5.46 S/N:
Executed: 13:16:25 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 5

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	30.08						
			15.00	0.450	0.450	1.980	30.08	26.80

Quick TR-55 Ver.5.46 S/N:
Executed: 13:16:25 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
EXISTING SITE
OVERALL SUB BASIN 5

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
EXISTING	0.450	30.08						
			15.00	0.450	0.450	2.950	30.08	39.93

APPENDIX C

DEVELOPED BASIN CALCULATIONS

Quick TR-55 Ver.5.46 S/N:
Executed: 13:17:50 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.750	11.27						
			10.00	0.750	0.750	1.810	11.27	15.30

Quick TR-55 Ver.5.46 S/N:
Executed: 13:17:50 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.750	11.27						
			10.00	0.750	0.750	2.390	11.27	20.20

Quick TR-55 Ver.5.46 S/N:
Executed: 13:17:50 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.750	11.27						
			10.00	0.750	0.750	3.570	11.27	30.18

Quick TR-55 Ver.5.46 S/N:
Executed: 13:20:17 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.860	8.76						
			10.00	0.860	0.860	1.810	8.76	13.64

Quick TR-55 Ver.5.46 S/N:
Executed: 13:20:17 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.860	8.76						
			10.00	0.860	0.860	2.390	8.76	18.01

Quick TR-55 Ver.5.46 S/N:
Executed: 13:20:17 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.860	8.76						
			10.00	0.860	0.860	3.570	8.76	26.89

Quick TR-55 Ver.5.46 S/N:
Executed: 13:22:27 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.770	51.81						
			10.00	0.770	0.770	1.810	51.81	72.21

Quick TR-55 Ver.5.46 S/N:
Executed: 13:22:27 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.770	51.81						
			10.00	0.770	0.770	2.390	51.81	95.35

Quick TR-55 Ver.5.46 S/N:
Executed: 13:22:27 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.770	51.81						
			10.00	0.770	0.770	3.570	51.81	142.42

Quick TR-55 Ver.5.46 S/N:
Executed: 13:23:41 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.700	15.82						
			10.00	0.700	0.700	1.810	15.82	20.04

Quick TR-55 Ver.5.46 S/N:
Executed: 13:23:41 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.700	15.82						
			10.00	0.700	0.700	2.390	15.82	26.47

Quick TR-55 Ver.5.46 S/N:
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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.700	15.82						
			10.00	0.700	0.700	3.570	15.82	39.53

Quick TR-55 Ver.5.46 S/N:
Executed: 13:24:46 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 5

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.450	30.08						
			15.00	0.450	0.450	1.500	30.08	20.30

Quick TR-55 Ver.5.46 S/N:
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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 5

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.450	30.08						
			15.00	0.450	0.450	1.980	30.08	26.80

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 5

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.450	30.08						
			15.00	0.450	0.450	2.950	30.08	39.93

APPENDIX D

DETENTION BASIN CALCULATIONS

Quick TR-55 Ver.5.46 S/N:
Executed: 13:19:23 02-16-2015

MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

```
*********************************************************************
*  RETURN FREQUENCY:  10 yr     |  Allowable Outflow:     7.61 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:     7,246 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   13.52 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  20 minutes                 |  Return Freq:    10 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                               |
   |                                               |
   |               Tc=   10.00  minutes            |
   |               I =   1.810  in/hr              |  Area (ac):    11.27
   |             . Q =   15.30  cfs                |  Weighted C:    0.75
   |            .|.                                |  Adjusted C:    0.75
F  |           .   .                               |
L  |          .  |  .             Required Storage |
O  |         .       .        .--     7,246 cu.ft. |  Td=      20 minutes
W  |        .    |    .       |                   |  I =   1.600 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   13.52 cfs
c  |      .                   |
f  |     .    x                                    x
s  |    .                o o o o o o o o o o o o o o o o   Q=    7.61 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   |  .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                 |   .      ============     |
   | o                     |    .                      |      x
   `-----------------------|---------------------------|------------
                        15.03 minutes               24.37 minutes
```

Quick TR-55 Ver.5.46 S/N:
Executed: 13:19:23 02-16-2015

MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

```
*********************************************************************
*  RETURN FREQUENCY:  25 yr     |  Allowable Outflow:    10.04 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:     7,153 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   15.64 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  20 minutes                 |  Return Freq:    25 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                               |
   |                                               |
   |               Tc=   10.00  minutes            |
   |               I =   2.390  in/hr              |  Area (ac):    11.27
   |             . Q =   20.20  cfs                |  Weighted C:    0.75
   |            .|.                                |  Adjusted C:    0.75
F  |           .   .                               |
L  |          .  |  .             Required Storage |
O  |         .       .        .--     7,153 cu.ft. |  Td=      20 minutes
W  |        .    |    .       |                   |  I =   1.850 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   15.64 cfs
c  |      .                   |
f  |     .    x                                    x
s  |    .                o o o o o o o o o o o o o o o o   Q=   10.04 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   |  .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                 |   .      ============     |
   | o                     |    .                      |      x
   `-----------------------|---------------------------|------------
                        15.03 minutes               23.58 minutes
```

Quick TR-55 Ver.5.46 S/N:
Executed: 13:19:23 02-16-2015

MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

```
*********************************************************************
*  RETURN FREQUENCY: 100 yr     |  Allowable Outflow:    14.96 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:     9,674 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   27.03 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  13 minutes                 |  Return Freq:   100 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                               |
   |                                               |
   |               Tc=   10.00  minutes            |
   |               I =   3.570  in/hr              |  Area (ac):    11.27
   |             . Q =   30.18  cfs                |  Weighted C:    0.75
   |            .|.                                |  Adjusted C:    0.75
F  |           .   .                               |
L  |          .  |  .             Required Storage |
O  |         .       .        .--     9,674 cu.ft. |  Td=      13 minutes
W  |        .    |    .       |                   |  I =   3.198 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   27.03 cfs
c  |      .                   |
f  |     .    x                                    x
s  |    .                 o o o o o o o o o o o o o o o o   Q=   14.96 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   | .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                |   .      ============     |
   | o                    |    .                      |      x
   `----------------------|---------------------------|------------
                       15.04 minutes               17.47 minutes
```

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

**** Modified Rational Hydrograph *****

Weighted C = 0.750 Area= 11.270 acres Tc = 10.00 minutes

Adjusted C = 0.750 Td= 20.00 min. I= 1.60 in/hr Qp= 13.52 cfs

RETURN FREQUENCY: 10 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 10 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	1.35	2.70	4.06	5.41	6.76	8.11
7.00	9.47	10.82	12.17	13.52	13.52	13.52	13.52
14.00	13.52	13.52	13.52	13.52	13.52	13.52	13.52
21.00	12.17	10.82	9.47	8.11	6.76	5.41	4.06
28.00	2.70	1.35	0.00				

Quick TR-55 Ver.5.46 S/N:
Executed: 13:19:23 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

**** Modified Rational Hydrograph *****

Weighted C = 0.750 Area= 11.270 acres Tc = 10.00 minutes

Adjusted C = 0.750 Td= 20.00 min. I= 1.85 in/hr Qp= 15.64 cfs

RETURN FREQUENCY: 25 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 25 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	1.56	3.13	4.69	6.25	7.82	9.38
7.00	10.95	12.51	14.07	15.64	15.64	15.64	15.64
14.00	15.64	15.64	15.64	15.64	15.64	15.64	15.64
21.00	14.07	12.51	10.95	9.38	7.82	6.25	4.69
28.00	3.13	1.56	0.00				

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

**** Modified Rational Hydrograph *****

Weighted C = 0.750 Area= 11.270 acres Tc = 10.00 minutes

Adjusted C = 0.750 Td= 13.00 min. I= 3.20 in/hr Qp= 27.03 cfs

RETURN FREQUENCY: 100 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 100 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	2.70	5.41	8.11	10.81	13.52	16.22
7.00	18.92	21.62	24.33	27.03	27.03	27.03	27.03
14.00	24.33	21.62	18.92	16.22	13.52	10.81	8.11
21.00	5.41	2.70	0.00				

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.750	11.27						
			10.00	0.750	0.750	1.810	11.27	15.30

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.750	11.27						
			10.00	0.750	0.750	2.390	11.27	20.20

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.750	11.27						
			10.00	0.750	0.750	3.570	11.27	30.18

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```
*************************************************************************
*************************************************************************
*                                                                       *
*                                                                       *
*                        MODIFIED RATIONAL METHOD                       *
*          ---- Grand Summary For All Storm Frequencies ----            *
*                                                                       *
*                                                                       *
*************************************************************************
*************************************************************************
```

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

Area = 11.27 acres Tc = 10.00 minutes

Frequency (years)	Adjusted 'C'	Duration minutes	Intens. in/hr	Qpeak cfs	Allowable cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
10	0.750	20	1.600	13.52	7.61	16,229	7,246
25	0.750	20	1.850	15.64	10.04	18,765	7,153
100	0.750	13	3.198	27.03	14.96	21,084	9,674

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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

RETURN FREQUENCY: 10 yr `C' Adjustment = 1.000 Allowable Q = 7.61 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.750	0.750	10	1.810	11.27	15.30	9,179	4,613
0.750	0.750	15	1.500	11.27	12.68	11,411	4,797
********** Storage Maximum							
0.750	0.750	20	1.600	11.27	13.52	16,229	7,246
0.750	0.750	30	1.139	11.27	9.63	17,328	4,299
0.750	0.750	40	0.859	11.27	7.26	Qpeak < Qallow	

Quick TR-55 Ver.5.46 S/N:
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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

RETURN FREQUENCY: 25 yr `C' Adjustment = 1.000 Allowable Q = 10.04 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.750	0.750	10	2.390	11.27	20.20	12,121	6,097
0.750	0.750	15	1.980	11.27	16.74	15,062	6,336
0.750	0.750	20	1.850	11.27	15.64	18,765	7,153
0.750	0.750	30	1.450	11.27	12.26	22,061	4,959
0.750	0.750	40	1.200	11.27	10.14	24,343	1,732
0.750	0.750	50	1.100	11.27	9.30	Qpeak < Qallow	

Storage Maximum

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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 1

RETURN FREQUENCY: 100 yr `C' Adjustment = 1.000 Allowable Q = 14.96 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.750	0.750	10	3.570	11.27	30.18	18,105	9,129
********** Storage Maximum							
0.750	0.750	13	3.198	11.27	27.03	21,084	9,674
0.750	0.750	15	2.950	11.27	24.93	22,441	9,445
0.750	0.750	20	2.500	11.27	21.13	25,358	8,358
0.750	0.750	30	1.733	11.27	14.65	Qpeak < Qallow	

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MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

```
*********************************************************************
*  RETURN FREQUENCY:  10 yr     |  Allowable Outflow:     5.91 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:     7,485 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   11.75 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  21 minutes                 |  Return Freq:    10 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                               |
   |                                               |
   |               Tc=   10.00  minutes            |
   |               I =   1.810  in/hr              |  Area (ac):     8.76
   |             . Q =   13.64  cfs                |  Weighted C:    0.86
   |            .|.                                |  Adjusted C:    0.86
F  |           .   .                               |
L  |          .  |  .             Required Storage |
O  |         .       .        .--     7,485 cu.ft. |  Td=      21 minutes
W  |        .    |    .       |                   |  I =   1.560 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   11.75 cfs
c  |      .                   |
f  |     .    x                                    x
s  |    .                o o o o o o o o o o o o o o o o o   Q=    5.91 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   |  .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                 |   .      ============     |
   | o                     |    .                      |      x
   `-----------------------|---------------------------|------------
                        15.67 minutes               25.97 minutes
```

Quick TR-55 Ver.5.46 S/N:
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MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

```
*********************************************************************
*  RETURN FREQUENCY:  25 yr     |  Allowable Outflow:     7.81 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:     7,649 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   13.94 cfs        Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |               Td =  20 minutes                  |  Return Freq:    25 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                                |
   |                                                |
   |                Tc=   10.00  minutes            |
   |                I =   2.390  in/hr              |  Area (ac):     8.76
   |              . Q =   18.01  cfs                |  Weighted C:    0.86
   |             .|.                                |  Adjusted C:    0.86
F  |            .   .                               |
L  |           .  |  .             Required Storage |
O  |          .       .        .--     7,649 cu.ft. |  Td=      20 minutes
W  |         .    |    .       |                   |  I =   1.850 in/hr
   |        .     x x x x x x x|x x x x x x x x x x  Q =   13.94 cfs
c  |       .                   |
f  |      .    x                                    x
s  |     .                 o o o o o o o o o o o o o o o o o   Q=    7.81 cfs
   |    .   x          o   |.                          |x  (Allow.Outflow)
   |   .           o       | .                         |
   |  .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                 |   .      ============     |
   | o                     |    .                      |      x
   `-----------------------|---------------------------|------------
                        15.66 minutes               24.40 minutes
```

Quick TR-55 Ver.5.46 S/N:
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MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

```
*********************************************************************
*  RETURN FREQUENCY: 100 yr     |  Allowable Outflow:    11.63 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:     9,927 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   23.16 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  14 minutes                 |  Return Freq:   100 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                               |
   |                                               |
   |               Tc=   10.00  minutes            |
   |               I =   3.570  in/hr              |  Area (ac):     8.76
   |             . Q =   26.89  cfs                |  Weighted C:    0.86
   |            .|.                                |  Adjusted C:    0.86
F  |           .   .                               |
L  |          .  |  .             Required Storage |
O  |         .       .        .--     9,927 cu.ft. |  Td=      14 minutes
W  |        .    |    .       |                   |  I =   3.074 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   23.16 cfs
c  |      .                   |
f  |     .    x                                    x
s  |    .                o o o o o o o o o o o o o o o o   Q=   11.63 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   |  .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                 |   .      ============     |
   | o                     |    .                      |      x
   `-----------------------|---------------------------|------------
                        15.68 minutes               18.98 minutes
```

Quick TR-55 Ver.5.46 S/N:
Executed: 13:20:49 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

**** Modified Rational Hydrograph *****

Weighted C = 0.860 Area= 8.760 acres Tc = 10.00 minutes

Adjusted C = 0.860 Td= 21.00 min. I= 1.56 in/hr Qp= 11.75 cfs

RETURN FREQUENCY: 10 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 10 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	1.18	2.35	3.53	4.70	5.88	7.05
7.00	8.23	9.40	10.58	11.75	11.75	11.75	11.75
14.00	11.75	11.75	11.75	11.75	11.75	11.75	11.75
21.00	11.75	10.58	9.40	8.23	7.05	5.88	4.70
28.00	3.53	2.35	1.18	0.00			

Quick TR-55 Ver.5.46 S/N:
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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

**** Modified Rational Hydrograph *****

Weighted C = 0.860 Area= 8.760 acres Tc = 10.00 minutes

Adjusted C = 0.860 Td= 20.00 min. I= 1.85 in/hr Qp= 13.94 cfs

RETURN FREQUENCY: 25 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 25 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	1.39	2.79	4.18	5.57	6.97	8.36
7.00	9.76	11.15	12.54	13.94	13.94	13.94	13.94
14.00	13.94	13.94	13.94	13.94	13.94	13.94	13.94
21.00	12.54	11.15	9.76	8.36	6.97	5.57	4.18
28.00	2.79	1.39	0.00				

Quick TR-55 Ver.5.46 S/N:
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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

**** Modified Rational Hydrograph *****

Weighted C = 0.860 Area= 8.760 acres Tc = 10.00 minutes

Adjusted C = 0.860 Td= 14.00 min. I= 3.07 in/hr Qp= 23.16 cfs

RETURN FREQUENCY: 100 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 100 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	2.32	4.63	6.95	9.26	11.58	13.89
7.00	16.21	18.53	20.84	23.16	23.16	23.16	23.16
14.00	23.16	20.84	18.53	16.21	13.89	11.58	9.26
21.00	6.95	4.63	2.32	0.00			

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.860	8.76						
			10.00	0.860	0.860	1.810	8.76	13.64

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.860	8.76						
			10.00	0.860	0.860	2.390	8.76	18.01

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.860	8.76						
			10.00	0.860	0.860	3.570	8.76	26.89

Quick TR-55 Ver.5.46 S/N:
Executed: 13:20:49 02-16-2015

```
*************************************************************************
*************************************************************************
*                                                                       *
*                                                                       *
*                        MODIFIED RATIONAL METHOD                       *
*          ---- Grand Summary For All Storm Frequencies ----            *
*                                                                       *
*                                                                       *
*************************************************************************
*************************************************************************
```

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

Area = 8.76 acres Tc = 10.00 minutes

Frequency (years)	Adjusted 'C'	Duration minutes	Intens. in/hr	Qpeak cfs	Allowable cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
10	0.860	21	1.560	11.75	5.91	14,808	7,485
25	0.860	20	1.850	13.94	7.81	16,725	7,649
100	0.860	14	3.074	23.16	11.63	19,453	9,927

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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

RETURN FREQUENCY: 10 yr `C' Adjustment = 1.000 Allowable Q = 5.91 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.860	0.860	10	1.810	8.76	13.64	8,181	4,635
0.860	0.860	15	1.500	8.76	11.30	10,170	5,010
0.860	0.860	20	1.600	8.76	12.05	14,465	7,473
0.860	0.860	21	1.560	8.76	11.75	14,808	7,485
0.860	0.860	30	1.139	8.76	8.58	15,444	5,259
0.860	0.860	40	0.859	8.76	6.47	15,533	2,199
0.860	0.860	50	0.900	8.76	6.78	20,341	3,388
0.860	0.860	60	0.800	8.76	6.03	21,697	1,391
0.860	0.860	120	0.520	8.76	3.92	Qpeak < Qallow	

Storage Maximum

Quick TR-55 Ver.5.46 S/N:
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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

RETURN FREQUENCY: 25 yr `C' Adjustment = 1.000 Allowable Q = 7.81 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.860	0.860	10	2.390	8.76	18.01	10,803	6,117
0.860	0.860	15	1.980	8.76	14.92	13,425	6,606
0.860	0.860	20	1.850	8.76	13.94	16,725	7,649
0.860	0.860	30	1.450	8.76	10.92	19,663	6,264
0.860	0.860	40	1.200	8.76	9.04	21,697	3,961
0.860	0.860	50	1.100	8.76	8.29	24,861	2,623
0.860	0.860	60	0.930	8.76	7.01	Qpeak < Qallow	

Storage Maximum

Quick TR-55 Ver.5.46 S/N:
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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 2

RETURN FREQUENCY: 100 yr `C' Adjustment = 1.000 Allowable Q = 11.63 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.860	0.860	10	3.570	8.76	26.89	16,137	9,159
********** Storage Maximum							
0.860	0.860	14	3.074	8.76	23.16	19,453	9,927
0.860	0.860	15	2.950	8.76	22.22	20,002	9,852
0.860	0.860	20	2.500	8.76	18.83	22,601	9,291
0.860	0.860	30	1.733	8.76	13.06	23,505	4,169
0.860	0.860	40	1.262	8.76	9.51	Qpeak < Qallow	

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MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

```
*********************************************************************
*  RETURN FREQUENCY:  10 yr     |  Allowable Outflow:    34.97 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:    35,299 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   63.83 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  20 minutes                 |  Return Freq:    10 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                               |
   |                                               |
   |               Tc=   10.00  minutes            |
   |               I =   1.810  in/hr              |  Area (ac):    51.81
   |             . Q =   72.21  cfs                |  Weighted C:    0.77
   |            .|.                                |  Adjusted C:    0.77
F  |           .   .                               |
L  |          .  |  .             Required Storage |
O  |         .       .        .--    35,299 cu.ft. |  Td=      20 minutes
W  |        .    |    .       |                   |  I =   1.600 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   63.83 cfs
c  |      .                   |
f  |     .    x                                    x
s  |    .                o o o o o o o o o o o o o o o o o   Q=   34.97 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   |  .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                 |   .      ============     |
   | o                     |    .                      |      x
   `----------------------|---------------------------|------------
                          15.16 minutes               24.52 minutes
```

Quick TR-55 Ver.5.46 S/N:
Executed: 13:22:49 02-16-2015

MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

```
*********************************************************************
*  RETURN FREQUENCY:  25 yr     |  Allowable Outflow:    46.16 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:    35,129 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   73.80 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  20 minutes                 |  Return Freq:    25 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                               |
   |                                               |
   |               Tc=   10.00  minutes            |
   |               I =   2.390  in/hr              |  Area (ac):    51.81
   |             . Q =   95.35  cfs                |  Weighted C:    0.77
   |            .|.                                |  Adjusted C:    0.77
F  |           .   .                               |
L  |          .  |  .             Required Storage |
O  |         .       .        .--    35,129 cu.ft. |  Td=      20 minutes
W  |        .    |    .       |                   |  I =   1.850 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   73.80 cfs
c  |      .                   |
f  |     .    x                                    x
s  |    .                o o o o o o o o o o o o o o o o   Q=   46.16 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   |  .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                 |   .      ============     |
   | o                     |    .                      |      x
   `-----------------------|---------------------------|------------
                        15.16 minutes               23.75 minutes
```

Quick TR-55 Ver.5.46 S/N:
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MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

```
*********************************************************************
*  RETURN FREQUENCY: 100 yr     |  Allowable Outflow:    68.78 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:    47,023 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:  127.58 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************


   |              Td =  13 minutes                 |  Return Freq:   100 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                               |
   |                                               |
   |               Tc=   10.00  minutes            |
   |               I =   3.570  in/hr              |  Area (ac):    51.81
   |             . Q =  142.42  cfs                |  Weighted C:    0.77
   |            .|.                                |  Adjusted C:    0.77
F  |           .   .                               |
L  |          .  |  .             Required Storage |
O  |         .       .        .--    47,023 cu.ft. |  Td=      13 minutes
W  |        .    |    .       |                   |  I =   3.198 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =  127.58 cfs
c  |      .                   |
f  |     .    x                                    x
s  |    .                o o o o o o o o o o o o o o o o   Q=   68.78 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   |  .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                 |   .      ============     |
   | o                     |    .                      |      x
   `-----------------------|---------------------------|------------
                        15.17 minutes               17.61 minutes
```

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

**** Modified Rational Hydrograph *****

Weighted C = 0.770 Area= 51.810 acres Tc = 10.00 minutes

Adjusted C = 0.770 Td= 20.00 min. I= 1.60 in/hr Qp= 63.83 cfs

RETURN FREQUENCY: 10 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 10 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	6.38	12.77	19.15	25.53	31.91	38.30
7.00	44.68	51.06	57.45	63.83	63.83	63.83	63.83
14.00	63.83	63.83	63.83	63.83	63.83	63.83	63.83
21.00	57.45	51.06	44.68	38.30	31.91	25.53	19.15
28.00	12.77	6.38	0.00				

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

**** Modified Rational Hydrograph *****

Weighted C = 0.770 Area= 51.810 acres Tc = 10.00 minutes

Adjusted C = 0.770 Td= 20.00 min. I= 1.85 in/hr Qp= 73.80 cfs

RETURN FREQUENCY: 25 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 25 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	7.38	14.76	22.14	29.52	36.90	44.28
7.00	51.66	59.04	66.42	73.80	73.80	73.80	73.80
14.00	73.80	73.80	73.80	73.80	73.80	73.80	73.80
21.00	66.42	59.04	51.66	44.28	36.90	29.52	22.14
28.00	14.76	7.38	0.00				

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

**** Modified Rational Hydrograph *****

Weighted C = 0.770 Area= 51.810 acres Tc = 10.00 minutes

Adjusted C = 0.770 Td= 13.00 min. I= 3.20 in/hr Qp= 127.58 cfs

RETURN FREQUENCY: 100 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 100 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	12.76	25.52	38.27	51.03	63.79	76.55
7.00	89.31	102.06	114.82	127.58	127.58	127.58	127.58
14.00	114.82	102.06	89.31	76.55	63.79	51.03	38.27
21.00	25.52	12.76	0.00				

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.770	51.81						
			10.00	0.770	0.770	1.810	51.81	72.21

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.770	51.81						
			10.00	0.770	0.770	2.390	51.81	95.35

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.770	51.81						
			10.00	0.770	0.770	3.570	51.81	142.42

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```
*************************************************************************
*************************************************************************
*                                                                       *
*                                                                       *
*                        MODIFIED RATIONAL METHOD                       *
*          ---- Grand Summary For All Storm Frequencies ----            *
*                                                                       *
*                                                                       *
*************************************************************************
*************************************************************************
```

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

Area = 51.81 acres Tc = 10.00 minutes

Frequency (years)	Adjusted 'C'	Duration minutes	Intens. in/hr	Qpeak cfs	Allowable cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
10	0.770	20	1.600	63.83	34.97	76,596	35,299
25	0.770	20	1.850	73.80	46.16	88,564	35,129
100	0.770	13	3.198	127.58	68.78	99,512	47,023

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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

RETURN FREQUENCY: 10 yr `C' Adjustment = 1.000 Allowable Q = 34.97 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.770	0.770	10	1.810	51.81	72.21	43,325	22,343
0.770	0.770	15	1.500	51.81	59.84	53,856	23,434
********** Storage Maximum							
0.770	0.770	20	1.600	51.81	63.83	76,596	35,299
0.770	0.770	30	1.139	51.81	45.43	81,782	21,830
0.770	0.770	40	0.859	51.81	34.27	Qpeak < Qallow	

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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

RETURN FREQUENCY: 25 yr `C' Adjustment = 1.000 Allowable Q = 46.16 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.770	0.770	10	2.390	51.81	95.35	57,208	29,512
0.770	0.770	15	1.980	51.81	78.99	71,091	30,935
0.770	0.770	20	1.850	51.81	73.80	88,564	35,129
0.770	0.770	30	1.450	51.81	57.85	104,123	25,381
0.770	0.770	40	1.200	51.81	47.87	114,894	10,758
0.770	0.770	50	1.100	51.81	43.88	Qpeak < Qallow	

Storage Maximum

Quick TR-55 Ver.5.46 S/N:
Executed: 13:22:49 02-16-2015

MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 3

RETURN FREQUENCY: 100 yr `C' Adjustment = 1.000 Allowable Q = 68.78 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.770	0.770	10	3.570	51.81	142.42	85,452	44,184
********** Storage Maximum							
0.770	0.770	13	3.198	51.81	127.58	99,512	47,023
0.770	0.770	15	2.950	51.81	117.69	105,918	46,110
0.770	0.770	20	2.500	51.81	99.73	119,681	41,410
0.770	0.770	30	1.733	51.81	69.15	124,468	11,223
0.770	0.770	40	1.262	51.81	50.34	Qpeak < Qallow	

Quick TR-55 Ver.5.46 S/N:
Executed: 13:24:00 02-16-2015

MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

```
*********************************************************************
*  RETURN FREQUENCY:  10 yr     |  Allowable Outflow:    10.68 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:     8,670 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   17.72 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  20 minutes                  |  Return Freq:    10 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                                |
   |                                                |
   |               Tc=   10.00  minutes             |
   |               I =   1.810  in/hr               |  Area (ac):    15.82
   |             . Q =   20.04  cfs                 |  Weighted C:    0.70
   |            .|.                                 |  Adjusted C:    0.70
F  |           .   .                                |
L  |          .  |  .             Required Storage |
O  |         .      .        .--     8,670 cu.ft. |  Td=      20 minutes
W  |        .    |    .       |                    |  I =   1.600 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   17.72 cfs
c  |      .                   |
f  |     .    x                                     x
s  |    .                o o o o o o o o o o o o o o o o o   Q=   10.68 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   | .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                |   .      ============     |
   | o                    |    .                      |      x
   `----------------------|---------------------------|------------
                       14.67 minutes               23.97 minutes
```

Quick TR-55 Ver.5.46 S/N:
Executed: 13:24:00 02-16-2015

MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

```
*********************************************************************
*  RETURN FREQUENCY:  25 yr     |  Allowable Outflow:    14.10 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:     8,322 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   20.49 cfs       Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |              Td =  20 minutes                  |  Return Freq:    25 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                                |
   |                                                |
   |               Tc=   10.00  minutes             |
   |               I =   2.390  in/hr               |  Area (ac):    15.82
   |             . Q =   26.47  cfs                 |  Weighted C:    0.70
   |            .|.                                 |  Adjusted C:    0.70
F  |           .   .                                |
L  |          .  |  .             Required Storage |
O  |         .       .        .--     8,322 cu.ft. |  Td=      20 minutes
W  |        .    |    .       |                    |  I =   1.850 in/hr
   |       .     x x x x x x x|x x x x x x x x x x  Q =   20.49 cfs
c  |      .                   |
f  |     .    x                                     x
s  |    .                 o o o o o o o o o o o o o o o o   Q=   14.10 cfs
   |   .   x          o   |.                          |x  (Allow.Outflow)
   |  .           o       | .                         |
   | .  x    o            |  .       NOT TO SCALE     |   x
   | .   o                |   .      ============     |
   | o                    |    .                      |      x
   `----------------------|---------------------------|------------
                       14.67 minutes               23.12 minutes
```

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MODIFIED RATIONAL METHOD
---- Graphical Summary for Maximum Required Storage ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

```
*********************************************************************
*  RETURN FREQUENCY: 100 yr     |  Allowable Outflow:    21.00 cfs    *
*  'C' Adjustment: 1.000        |  Required Storage:    11,633 cu.ft. *
*-------------------------------------------------------------------*
*  Peak Inflow:   35.41 cfs        Inflow .HYD stored: NONE STORED    *
*********************************************************************
```

```
   |               Td =  13 minutes                  |  Return Freq:   100 yr
   /------- Approx. Duration for Max. Storage ------/  C adj.factor: 1.00
   |                                                |
   |                                                |
   |                Tc=   10.00  minutes            |
   |                I =   3.570  in/hr              |  Area (ac):    15.82
   |              . Q =   39.53  cfs                |  Weighted C:    0.70
   |             .|.                                |  Adjusted C:    0.70
F  |            .   .                               |
L  |           .  |  .             Required Storage |
O  |          .       .        .--    11,633 cu.ft. |  Td=      13 minutes
W  |         .    |    .       |                   |  I =   3.198 in/hr
   |        .     x x x x x x x|x x x x x x x x x x x  Q =   35.41 cfs
c  |       .                   |
f  |      .    x                                     x
s  |     .                o o o o o o o o o o o o o o o o o   Q=   21.00 cfs
   |    .   x          o   |.                           |x  (Allow.Outflow)
   |   .          o        | .                          |
   |  .  x    o             |  .       NOT TO SCALE      |   x
   | .   o                  |   .      ============      |
   | o                      |    .                       |      x
   `-----------------------|----------------------------|------------
                        14.69 minutes                17.07 minutes
```

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

**** Modified Rational Hydrograph *****

Weighted C = 0.700 Area= 15.820 acres Tc = 10.00 minutes

Adjusted C = 0.700 Td= 20.00 min. I= 1.60 in/hr Qp= 17.72 cfs

RETURN FREQUENCY: 10 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 10 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	1.77	3.54	5.32	7.09	8.86	10.63
7.00	12.40	14.17	15.95	17.72	17.72	17.72	17.72
14.00	17.72	17.72	17.72	17.72	17.72	17.72	17.72
21.00	15.95	14.17	12.40	10.63	8.86	7.09	5.32
28.00	3.54	1.77	0.00				

Quick TR-55 Ver.5.46 S/N:
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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

**** Modified Rational Hydrograph *****

Weighted C = 0.700 Area= 15.820 acres Tc = 10.00 minutes

Adjusted C = 0.700 Td= 20.00 min. I= 1.85 in/hr Qp= 20.49 cfs

RETURN FREQUENCY: 25 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 25 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	2.05	4.10	6.15	8.19	10.24	12.29
7.00	14.34	16.39	18.44	20.49	20.49	20.49	20.49
14.00	20.49	20.49	20.49	20.49	20.49	20.49	20.49
21.00	18.44	16.39	14.34	12.29	10.24	8.19	6.15
28.00	4.10	2.05	0.00				

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Executed: 13:24:00 02-16-2015

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

**** Modified Rational Hydrograph *****

Weighted C = 0.700 Area= 15.820 acres Tc = 10.00 minutes

Adjusted C = 0.700 Td= 13.00 min. I= 3.20 in/hr Qp= 35.41 cfs

RETURN FREQUENCY: 100 year storm Adj.factor = 1.00
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE
For the 100 Year Storm

Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	3.54	7.08	10.62	14.17	17.71	21.25
7.00	24.79	28.33	31.87	35.41	35.41	35.41	35.41
14.00	31.87	28.33	24.79	21.25	17.71	14.17	10.62
21.00	7.08	3.54	0.00				

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 10 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.700	15.82						
			10.00	0.700	0.700	1.810	15.82	20.04

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.700	15.82						
			10.00	0.700	0.700	2.390	15.82	26.47

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MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

* * * * * * SUMMARY OF RATIONAL METHOD PEAK DISCHARGES * * * * * *

Q = adj * C * I * A
Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres
adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years
`C' adjustment, k = 1
Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELPED	0.700	15.82						
			10.00	0.700	0.700	3.570	15.82	39.53

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```
*************************************************************************
*************************************************************************
*                                                                       *
*                                                                       *
*                        MODIFIED RATIONAL METHOD                       *
*          ---- Grand Summary For All Storm Frequencies ----            *
*                                                                       *
*                                                                       *
*************************************************************************
*************************************************************************
```

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

Area = 15.82 acres Tc = 10.00 minutes

Frequency (years)	Adjusted 'C'	Duration minutes	Intens. in/hr	Qpeak cfs	Allowable cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
10	0.700	20	1.600	17.72	10.68	21,262	8,670
25	0.700	20	1.850	20.49	14.10	24,584	8,322
100	0.700	13	3.198	35.41	21.00	27,623	11,633

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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

RETURN FREQUENCY: 10 yr `C' Adjustment = 1.000 Allowable Q = 10.68 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.700	0.700	10	1.810	15.82	20.04	12,026	5,618
0.700	0.700	15	1.500	15.82	16.61	14,950	5,691
0.700	0.700	20	1.600	15.82	17.72	21,262	8,670
0.700	0.700	30	1.139	15.82	12.61	22,702	4,484
0.700	0.700	40	0.859	15.82	9.51	Qpeak < Qallow	

Storage Maximum

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MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

RETURN FREQUENCY: 25 yr `C' Adjustment = 1.000 Allowable Q = 14.10 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.700	0.700	10	2.390	15.82	26.47	15,880	7,420
0.700	0.700	15	1.980	15.82	21.93	19,734	7,511
0.700	0.700	20	1.850	15.82	20.49	24,584	8,322
0.700	0.700	30	1.450	15.82	16.06	28,903	4,984
0.700	0.700	40	1.200	15.82	13.29	Qpeak < Qallow	

Storage Maximum

Quick TR-55 Ver.5.46 S/N:
Executed: 13:24:00 02-16-2015

MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

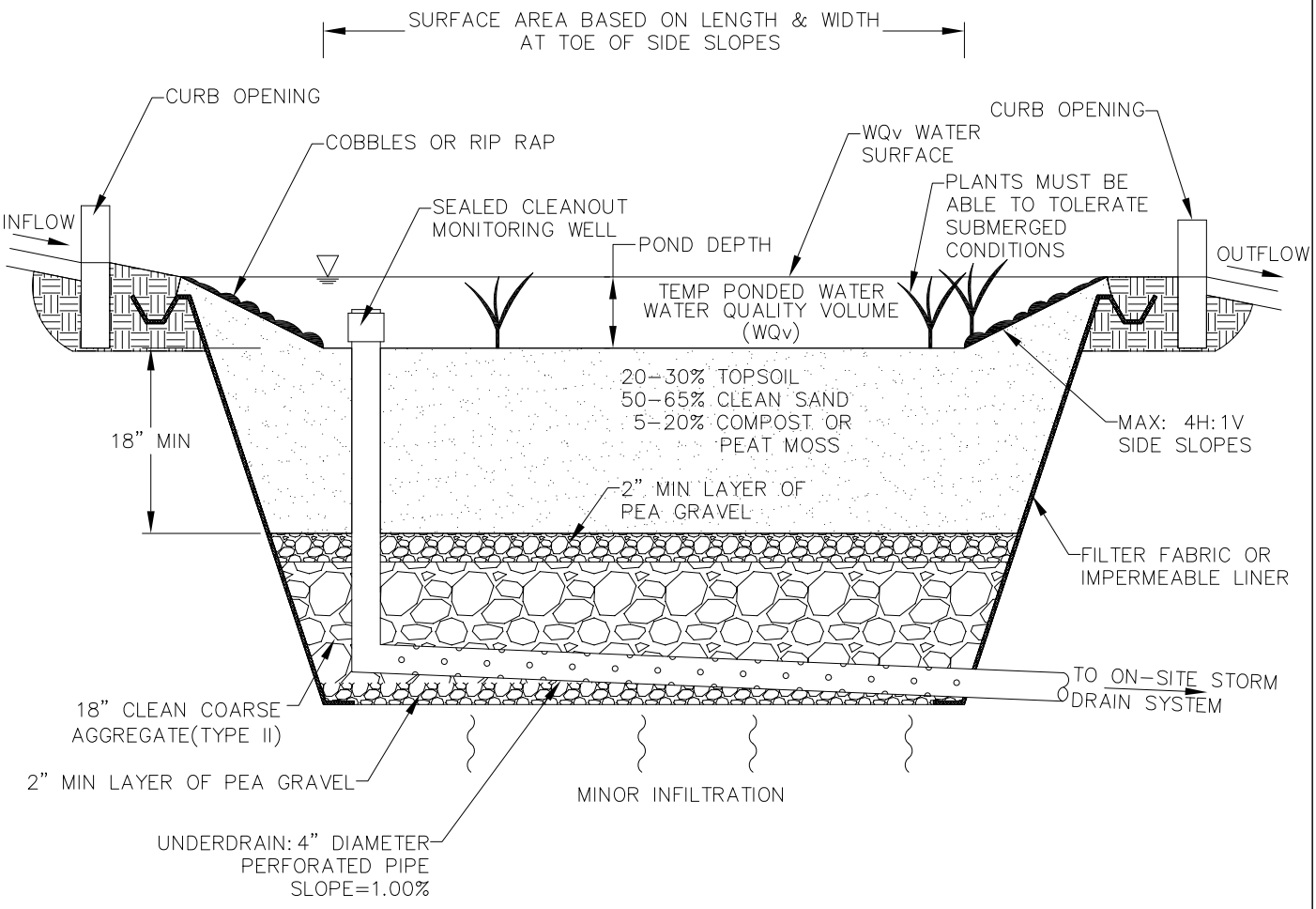
First peak outflow point assumed to occur at Tc hydrograph recession leg.

MUSTANG INDUSTRIAL DEVELOPMENT
DEVELOPED SITE
OVERALL SUB BASIN 4

RETURN FREQUENCY: 100 yr `C' Adjustment = 1.000 Allowable Q = 21.00 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes

Weighted `C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	VOLUMES Inflow (cu.ft.)	Storage (cu.ft.)
0.700	0.700	10	3.570	15.82	39.53	23,721	11,121
********** Storage Maximum							
0.700	0.700	13	3.198	15.82	35.41	27,623	11,633
0.700	0.700	15	2.950	15.82	32.67	29,401	11,205
0.700	0.700	20	2.500	15.82	27.68	33,222	9,454
0.700	0.700	30	1.733	15.82	19.19	Qpeak < Qallow	



LANDSCAPE
DETENTION BASIN

SOLAEGUI
ENGINEERS, LTD

MUSTANG INDUSTRIAL DEVELOPMENT

TRAFFIC ANALYSIS

FEBRUARY, 2015

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MUSTANG INDUSTRIAL DEVELOPMENT

TRAFFIC ANALYSIS

EXECUTIVE SUMMARY

The proposed Mustang Industrial Development will be located in the Mustang area of Washoe County, Nevada. The project site is located southeast of Interstate 80, southwest of Mustang Road, and north of the Truckee River. The project site is currently undeveloped land. The proposed Mustang Industrial Development will consist of the construction of a Built-To-Suit (BTS) facility and other speculative industrial/warehouse land uses. The purpose of this study is to address the project's impact upon the adjacent street network. The existing eastbound and westbound on-ramps and the eastbound off-ramp at the Interstate 80/Mustang Interchange and the proposed project access intersection with Mustang Road have been identified for AM and PM peak hour capacity analysis for the following scenarios:

1. Existing
2. Existing plus BTS Facility
3. Existing plus BTS Facility plus Other Land Uses
4. 2025 Base
5. 2025 Base plus BTS Facility
6. 2025 Base plus BTS Facility plus Other Land Uses
7. 2035 Base
8. 2035 Base plus BTS Facility
9. 2035 Base plus BTS Facility plus Other Land Uses

The proposed Mustang Industrial Development will consist of the construction of a Built-To-Suit (BTS) facility containing 344,000 square feet of floor area and other speculative industrial/ warehouse land uses that will include up to 600,000 square feet of floor area. The Built-To-Suit facility is anticipated to generate 3,402 average daily trips with 310 trips occurring during the AM peak hour and 286 trips occurring during the PM peak hour. The other speculative land uses are anticipated to generate 2,818 average daily trips with 304 trips occurring during the AM peak hour and 322 trips occurring during the PM peak hour.

Traffic generated by the proposed Mustang Industrial Development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping, or traffic control improvements comply with Nevada Department of Transportation and Washoe County requirements.

It is recommended that the Mustang Road/Project Access intersection be constructed with a right turn ingress taper and radius similar to an NDOT Type 4 approach and include stop sign control at the Project Access approach.

It is recommended that the Mustang Road/Project Access intersection be designed to meet sight distance requirements.

INTRODUCTION

STUDY AREA

The proposed Mustang Industrial Development will be located in the Mustang area of Washoe County, Nevada. The project site is located southeast of Interstate 80, southwest of Mustang Road, and north of the Truckee River. Figure 1 shows the approximate location of the project site. The proposed Mustang Industrial Development will consist of the construction of a Built-To-Suit (BTS) facility and other speculative industrial/warehouse land uses. The purpose of this study is to address the project's impact upon the adjacent street network. The existing eastbound and westbound on-ramps and the eastbound off-ramp at the Interstate 80/Mustang Interchange and the proposed project access intersection with Mustang Road have been identified for AM and PM peak hour capacity analysis for the following scenarios:

1. Existing
2. Existing plus BTS Facility
3. Existing plus BTS Facility plus Other Land Uses
4. 2025 Base
5. 2025 Base plus BTS Facility
6. 2025 Base plus BTS Facility plus Other Land Uses
7. 2035 Base
8. 2035 Base plus BTS Facility
9. 2035 Base plus BTS Facility plus Other Land Uses

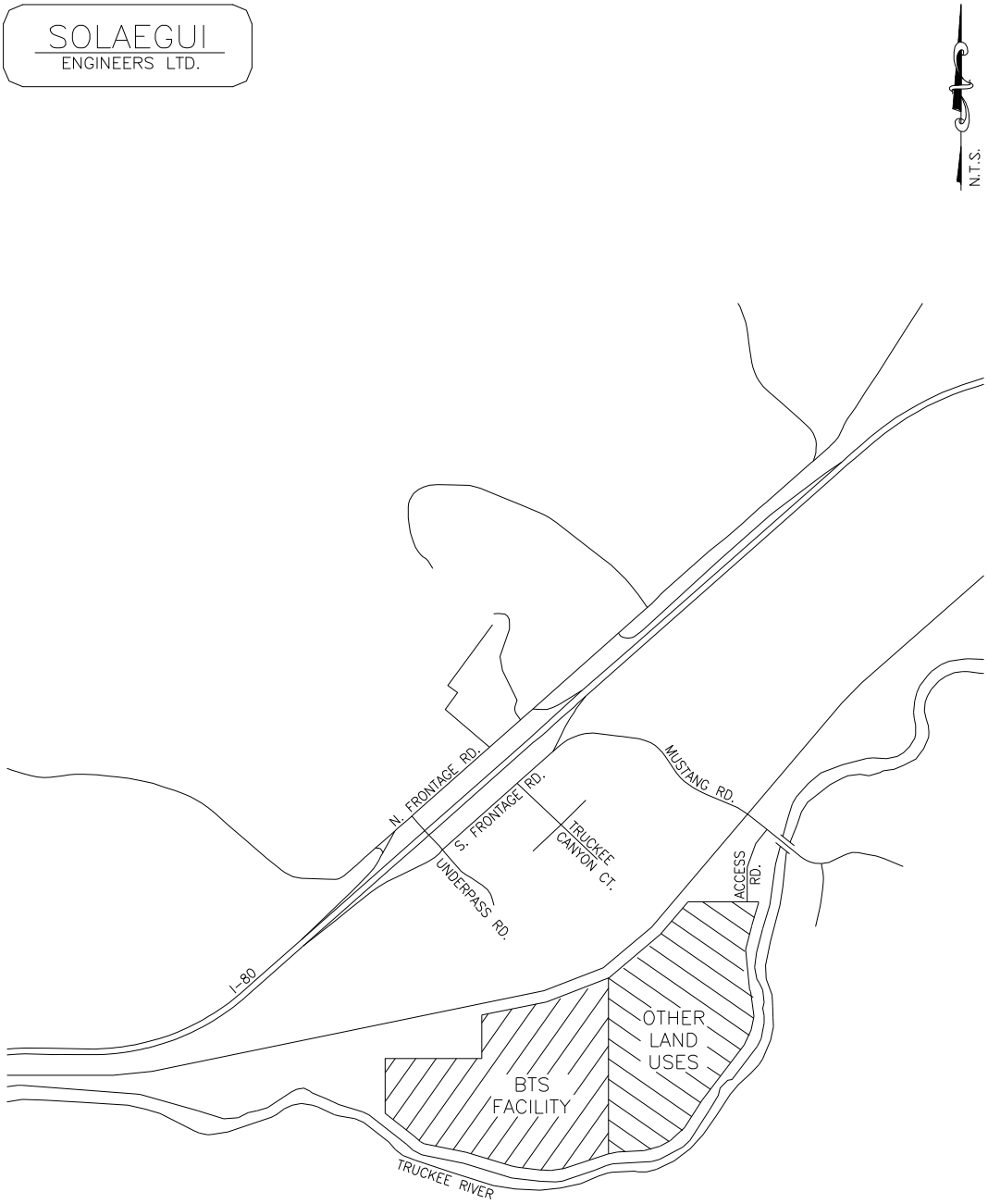
EXISTING AND PROPOSED LAND USES

The project site is currently undeveloped land. Adjacent properties generally include industrial development to the north and undeveloped land to the south, east, and west. The proposed Mustang Industrial Development will consist of the construction of a Built-To-Suit (BTS) facility containing 344,000 square feet of floor area and other speculative industrial/warehouse land uses that will include up to 600,000 square feet of floor area.

EXISTING AND PROPOSED ROADWAYS AND INTERSECTIONS

The Interstate 80/Mustang Interchange is a split diamond interchange with a north frontage road provided between the westbound on and off-ramps and a south frontage road provided between the eastbound on and off-ramps. The on and off-ramps ramps contain single lanes.

The North Frontage Road is a two-lane roadway with one through lane in each direction. The speed limit is posted for 45 miles per hour. Roadway improvements include graded shoulders with solid white edgelines and a double solid yellow centerline.



MUSTANG INDUSTRIAL DEVELOPMENT

VICINITY MAP
FIGURE 1

The South Frontage Road is a two-lane roadway with one through lane in each direction. The speed limit is posted for 35 miles per hour. Roadway improvements include paved and graded shoulders with solid white edgelines and a double solid yellow centerline. Curb and gutter improvements exist in developed areas.

Underpass Road is a two-lane roadway with one through lane in each direction between the north and south frontage roads. The speed limit is not posted. Roadway improvements include graded shoulders with solid white edgelines and a double solid yellow centerline.

Mustang Road is a two-lane roadway with one through lane in each direction in the vicinity of the site. The speed limit is posted for 25 miles per hour. Roadway improvements include paved and graded shoulders with solid white edgelines and a double solid yellow centerline.

The North Frontage Road/Underpass Road intersection is an unsignalized three-leg intersection with stop sign control at the south Underpass Road approach. The east approach contains one shared left turn-through lane. The west approach contains one shared through-right turn lane. The south approach contains one shared left turn-right turn lane.

The North Frontage Road/I-80 Westbound On-Ramp intersection is an unsignalized three-leg intersection with no traffic controls. The east approach contains one shared left turn-through lane. The west approach contains one shared through-right turn lane. The south leg is the on-ramp to westbound I-80.

The South Frontage Road/I-80 Eastbound Off-Ramp/Underpass Road intersection is an unsignalized four-leg intersection with stop sign control at the east, west, and south approaches. The north approach contains one shared left turn-through lane. The south approach contains one shared through-right turn lane. The east approach contains one shared left turn-right turn lane. The west approach contains one shared left turn-through-right turn lane.

The South Frontage Road/I-80 Eastbound On-Ramp intersection is an unsignalized three-leg intersection with no traffic control. The east approach contains one shared through-right turn lane. The west approach contains one shared left turn-through lane. The north leg is the on-ramp to eastbound I-80.

The Mustang Road/Project Access intersection does not currently exist but will be constructed as an unsignalized three-leg intersection with stop sign control at the west approach. The north, south, and east approaches are anticipated to contain single lanes.

TRIP GENERATION

In order to assess the magnitude of traffic impacts of the proposed development on the adjacent street network, trip generation rates and peak hours had to be determined. Trip generation rates were obtained from the *Ninth Edition of ITE Trip Generation* (2012).

ITE Land Use 30: Intermodal Truck Terminal was used to calculate trip generation for the Built-To-Suit facility with 344,000 square feet of floor area. ITE Land Uses 110: General Light Industrial and 150: Warehousing were used to calculate trip generation for the other land uses with 200,000 square feet of building area attributed to the industrial land use and 400,000 square feet attributed to the warehousing land use.

Trip generation was calculated for the weekday peak hours occurring between 7:00 and 9:00 AM and 4:00 and 6:00 PM, which correspond to the peak hours of adjacent street traffic. Table 1 shows a summary of the average weekday traffic (ADT) volumes and weekday peak hour volumes generated by the proposed BTS facility and other land uses.

TABLE 1
TRIP GENERATION

LAND USE/VARIABLE	ADT	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
BTS FACILITY Truck Terminal (344,000 S.F.)	3,402	124	186	310	123	163	286
OTHER LAND USES							
Light Industrial (200,000 S.F.)	1,394	162	22	184	23	171	194
Warehousing (400,000 S.F.)	1,424	95	25	120	32	96	128
Total	2,818	257	47	304	55	267	322
GRAND TOTAL	6,220	381	233	614	178	430	608

The Built-To-Suit facility is anticipated to generate 3,402 average daily trips with 310 trips occurring during the AM peak hour and 286 trips occurring during the PM peak hour. The other land uses are anticipated to generate 2,818 average daily trips with 304 trips occurring during the AM peak hour and 322 trips occurring during the PM peak hour.

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of the project traffic to the key intersections was based on existing peak hour traffic patterns and the locations of attractions and productions. Figure 2 shows the anticipated directions of approach. The peak hour trip generation volumes shown in Table 1 were subsequently assigned to the key intersections based on the directions of approach. Figure 3A shows the AM and PM peak hour trip assignment at the key intersections for the BTS facility. Figure 3B shows the AM and PM peak hour trip assignment at the key intersections for the other industrial/warehouse land uses.

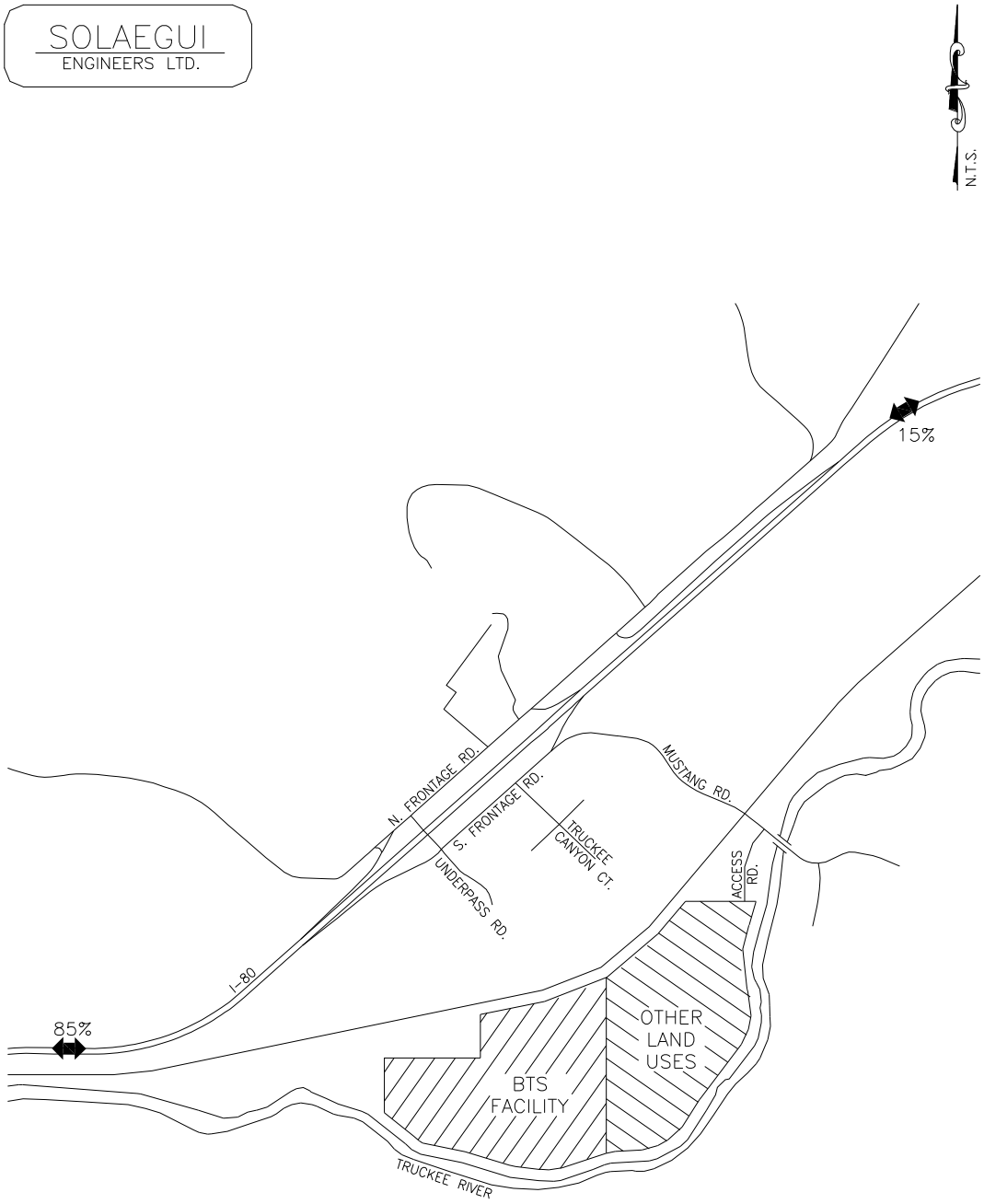
EXISTING AND PROJECTED TRAFFIC VOLUMES

Existing peak hour turning movement volumes at the key intersections were obtained from traffic counts taken in December of 2014. Figure 4 shows the existing peak hour turning movement volumes at the key intersections. Figure 5 shows the existing plus BTS peak hour turning movement volumes at the key intersections. The existing plus BTS turning movement volumes were obtained by adding the trip assignment volumes shown on Figure 3A to the existing turning movement volumes shown on Figure 4. Figure 6 shows the existing plus BTS plus other turning movement volumes at the key intersections. The existing plus BTS plus other turning movement volumes were obtained by adding the trip assignment volumes shown on Figure 3B to the existing plus BTS turning movement volumes shown on Figure 5.

Figure 7 shows the 2025 base turning movement volumes at the key intersections. Figure 8 shows the 2025 base plus BTS peak hour turning movement volumes at the key intersections. Figure 9 shows the intersection turning movement volumes for the 2025 base plus BTS plus other scenario. Figure 10 shows the 2035 base turning movement volumes at the key intersections. Figure 11 shows the 2035 base plus BTS peak hour turning movement volumes at the key intersections. Figure 12 shows the turning movement volumes for the 2035 base plus BTS plus other scenario. The 2025 and 2035 base turning movement volumes were estimated by applying a 2.4% average annual growth rate to the existing turning movement volumes. The growth rate was derived from 20-year historic traffic data obtained from the Nevada Department of Transportation's Annual Traffic Reports for count stations at the I-80/Mustang Interchange.

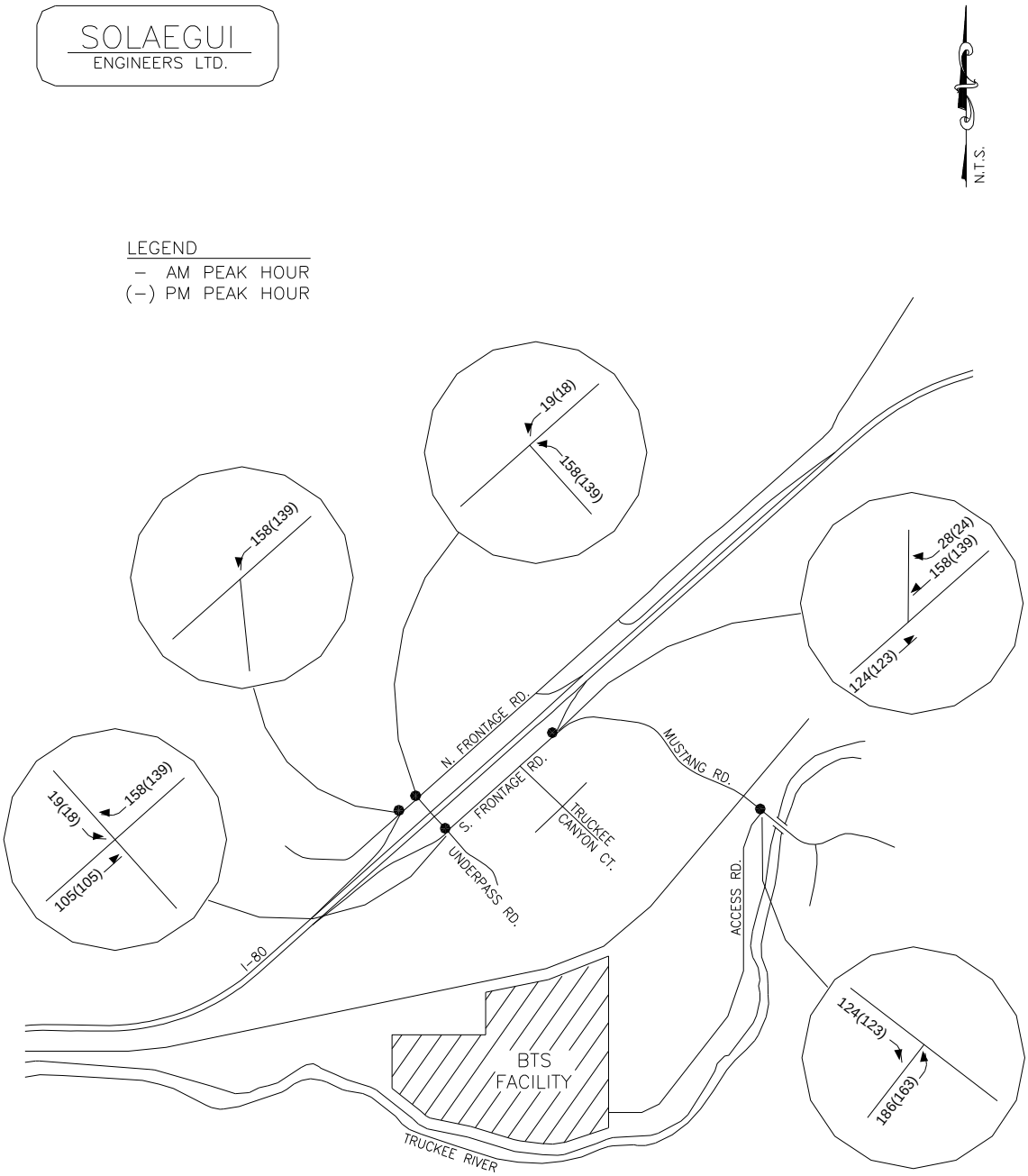
INTERSECTION CAPACITY ANALYSIS

The key intersections were analyzed for capacity based on procedures presented in the *Highway Capacity Manual* (2010), prepared by the Transportation Research Board, for unsignalized intersections. The result of capacity analysis is a level of service (LOS) rating for each unsignalized intersection minor movement. Level of service is a qualitative measure of traffic operating conditions where a letter grade "A" through "F", corresponding to progressively worsening traffic operation, is assigned to the intersection minor movement.



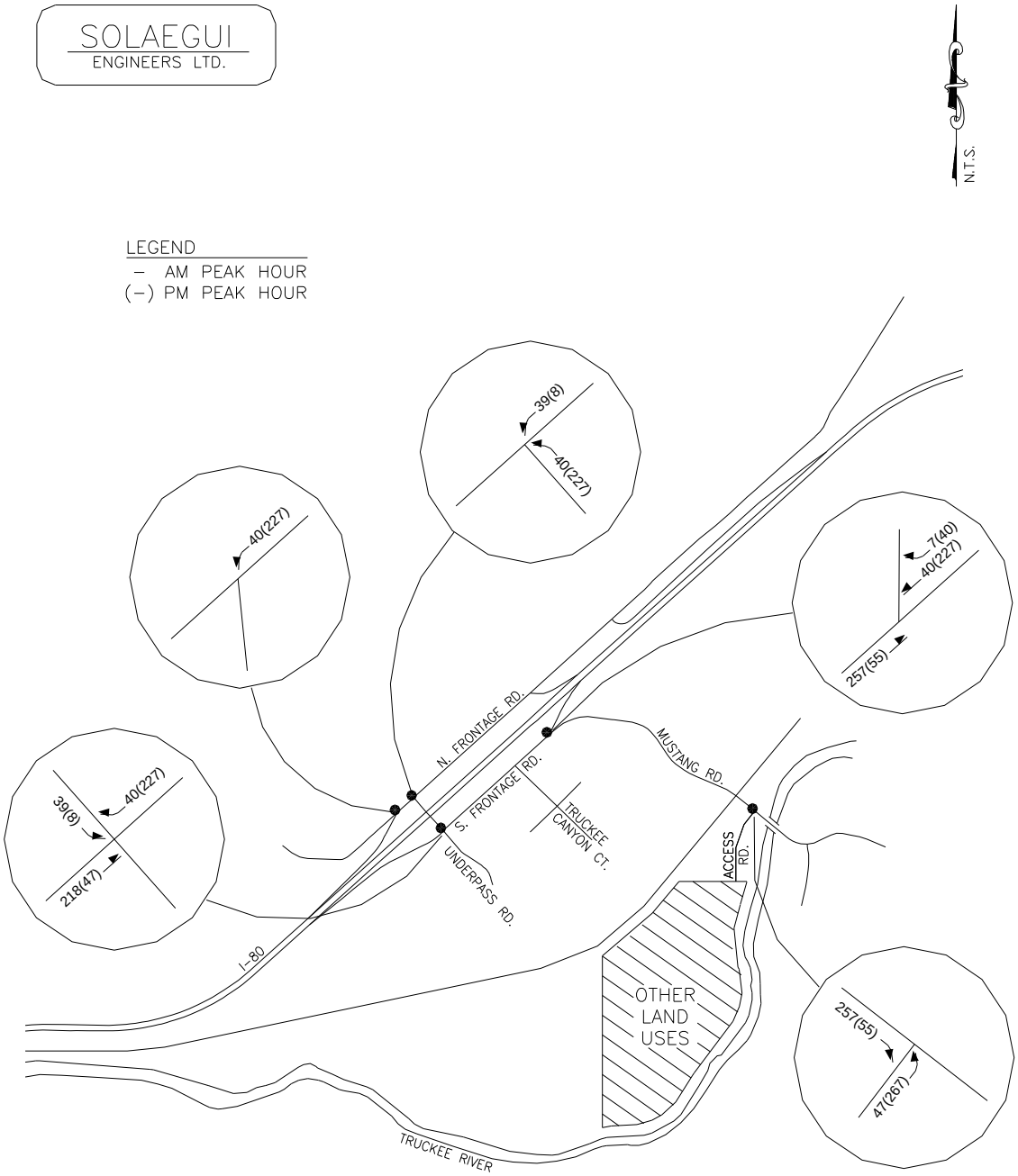
MUSTANG INDUSTRIAL DEVELOPMENT

DIRECTIONS OF APPROACH
FIGURE 2



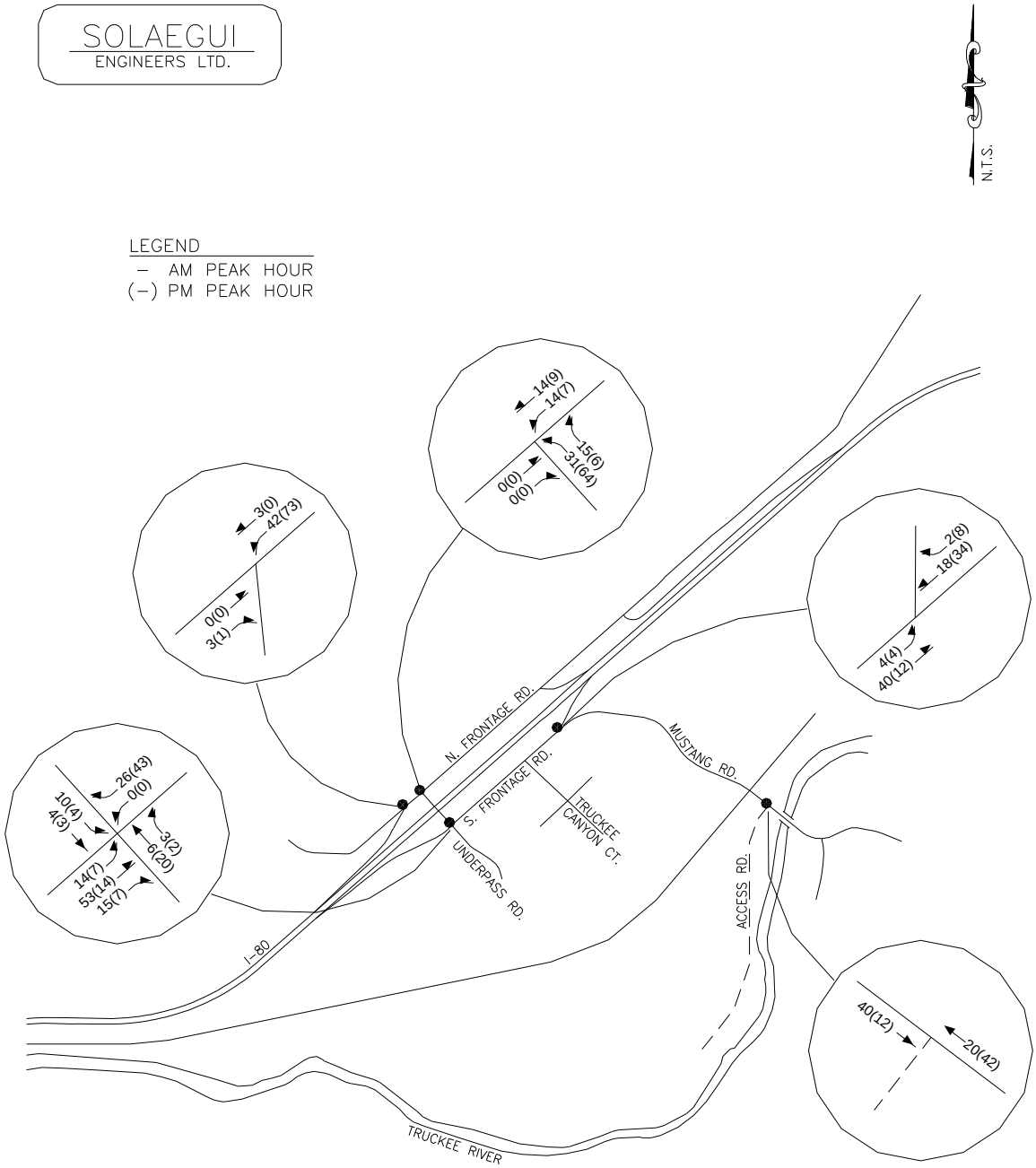
MUSTANG INDUSTRIAL DEVELOPMENT

TRIP ASSIGNMENT (BTS FACILITY)
FIGURE 3A



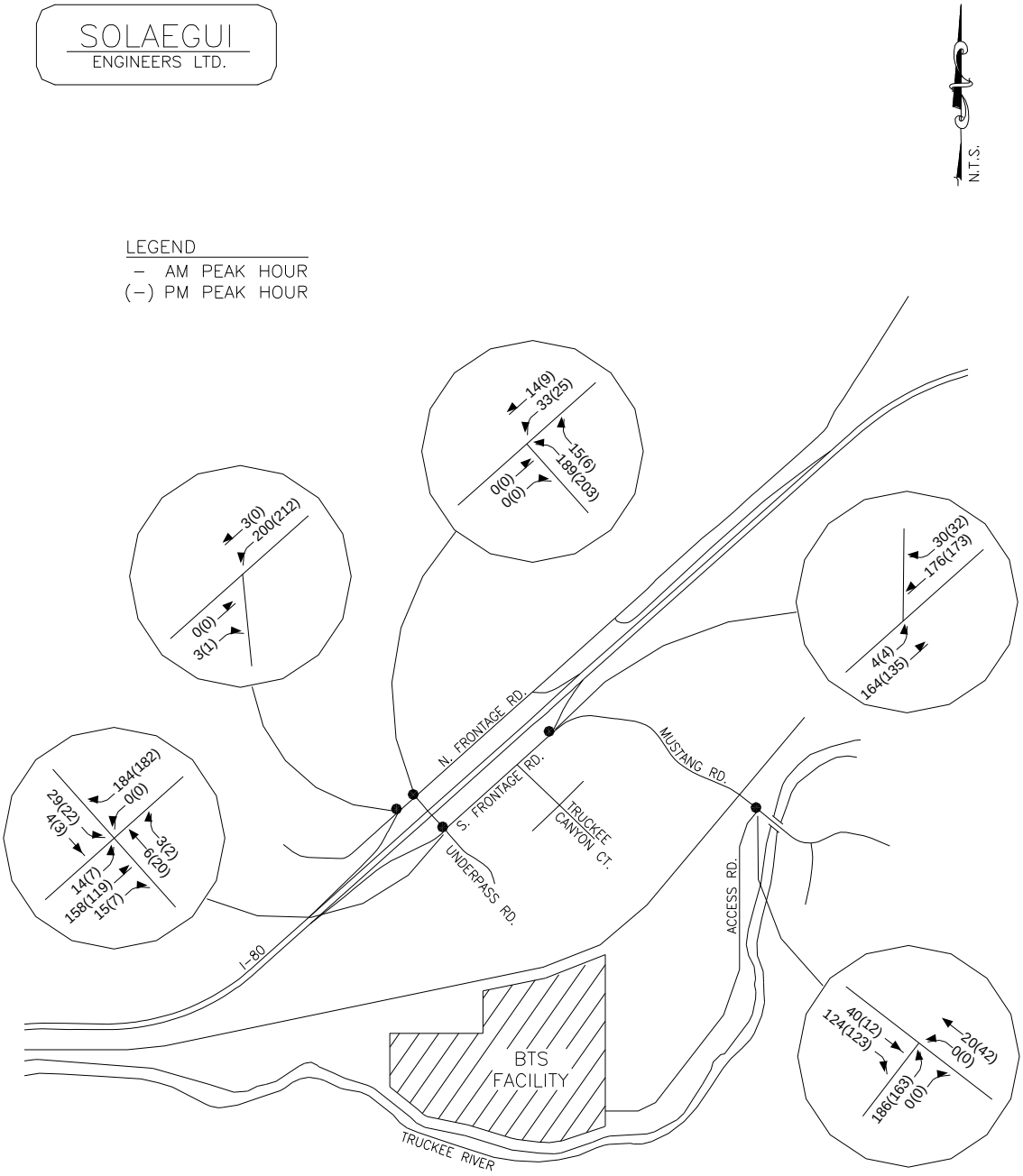
MUSTANG INDUSTRIAL DEVELOPMENT

TRIP ASSIGNMENT (OTHER LAND USES)
FIGURE 3B



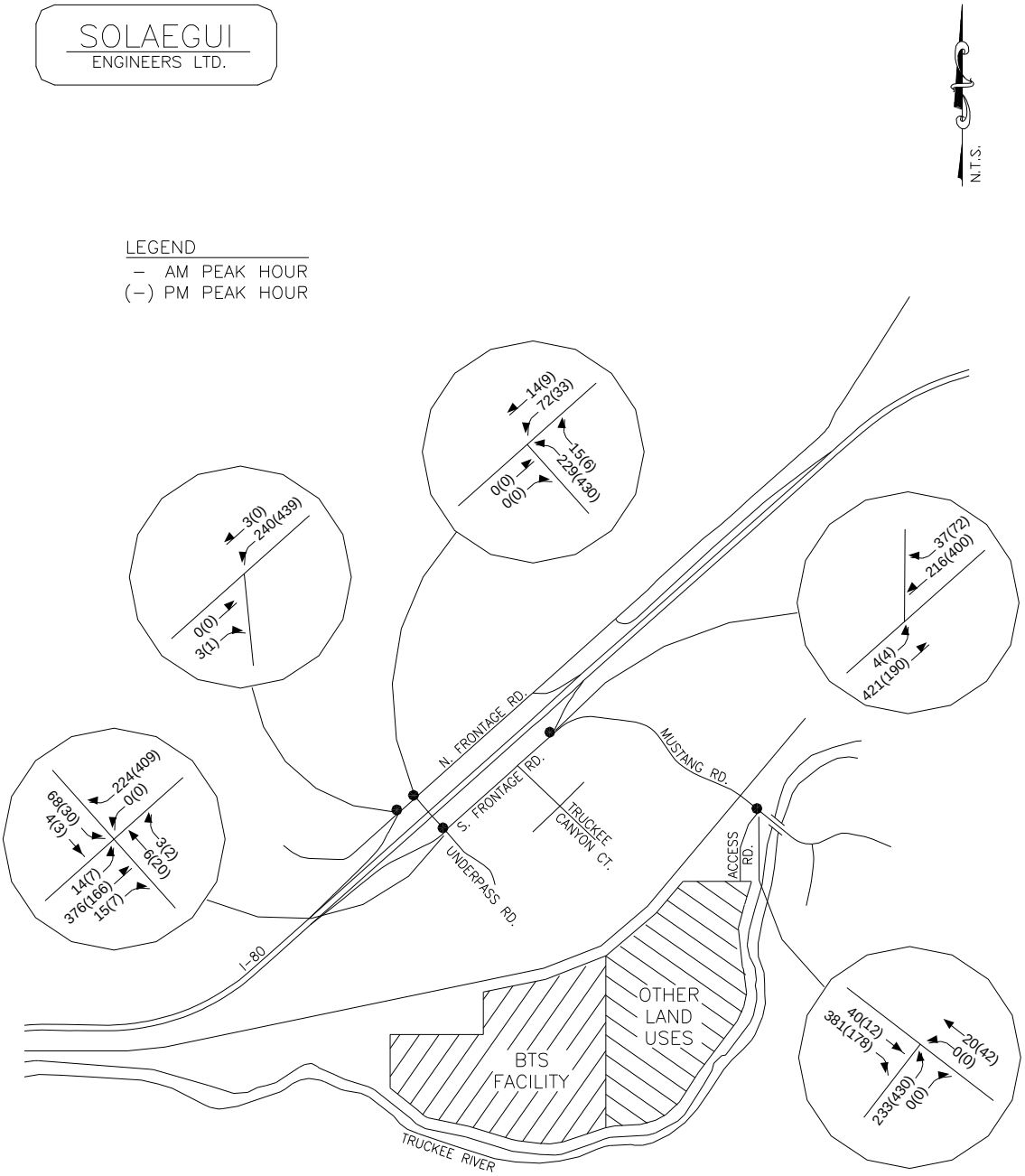
MUSTANG INDUSTRIAL DEVELOPMENT

EXISTING TURNING MOVEMENT VOLUMES
FIGURE 4



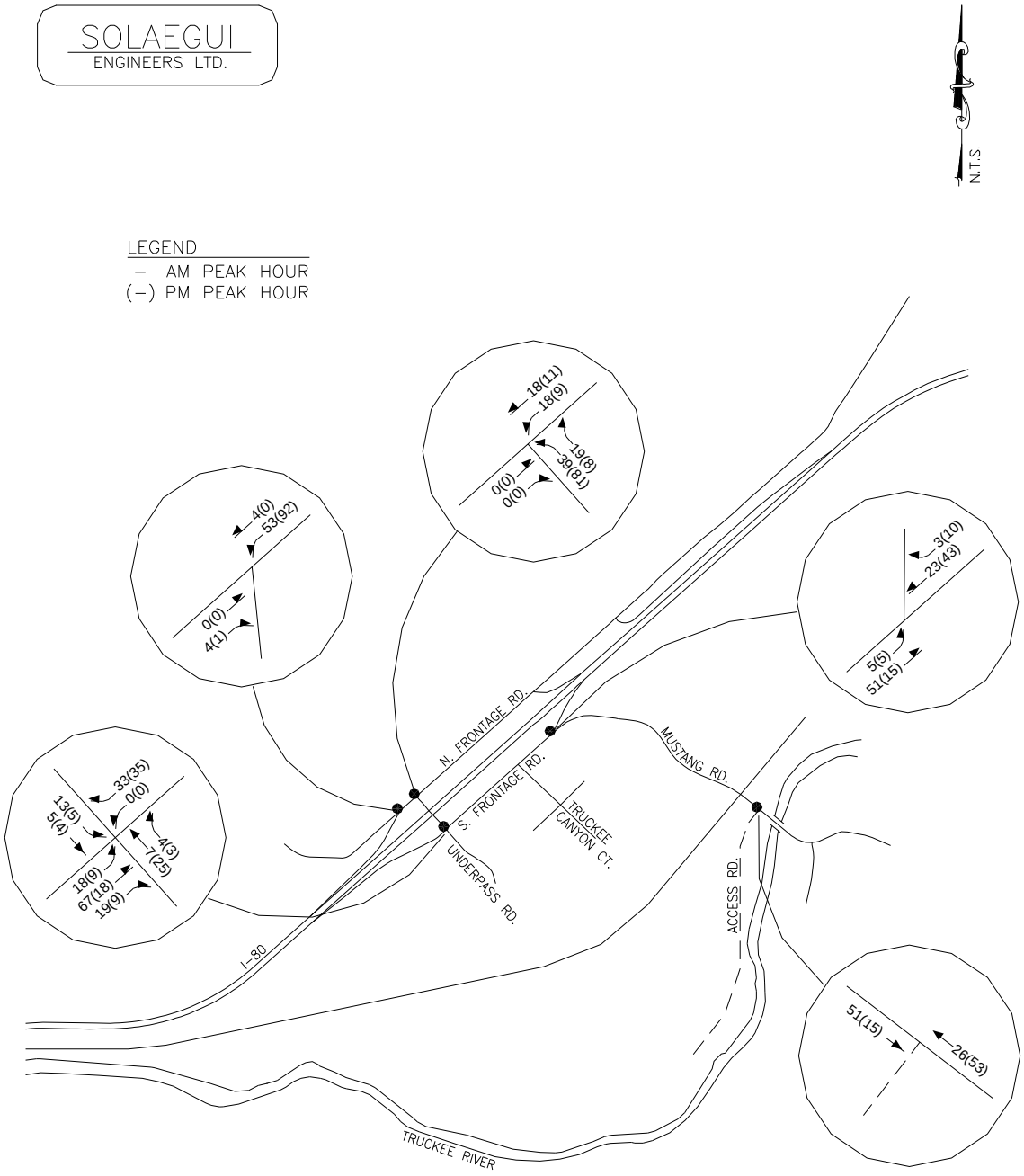
MUSTANG INDUSTRIAL DEVELOPMENT

EXISTING + BTS TURNING MOVEMENT VOLUMES
FIGURE 5



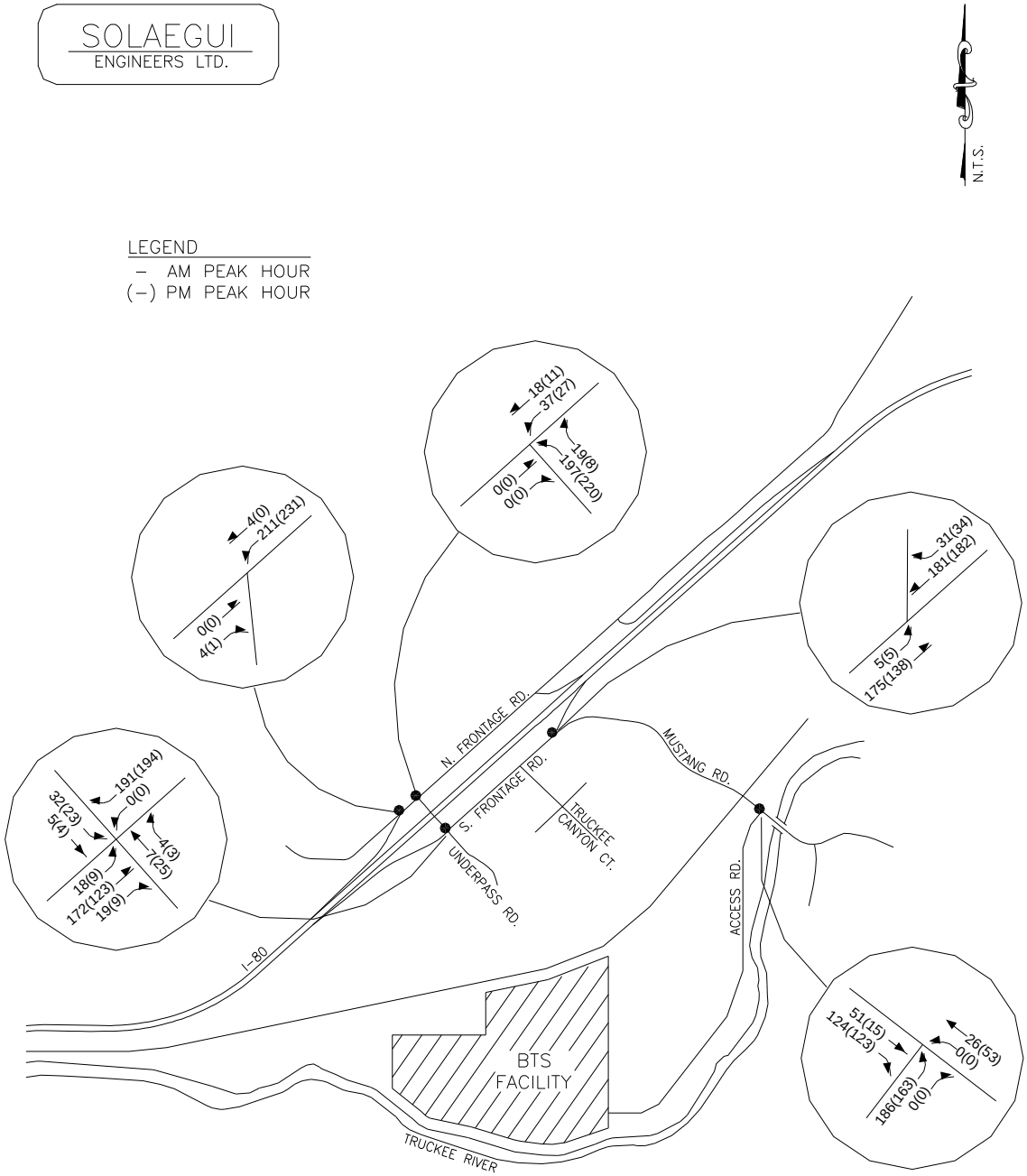
MUSTANG INDUSTRIAL DEVELOPMENT

EXIST. + BTS + OTHER TURNING MOVEMENT VOLUMES
FIGURE 6



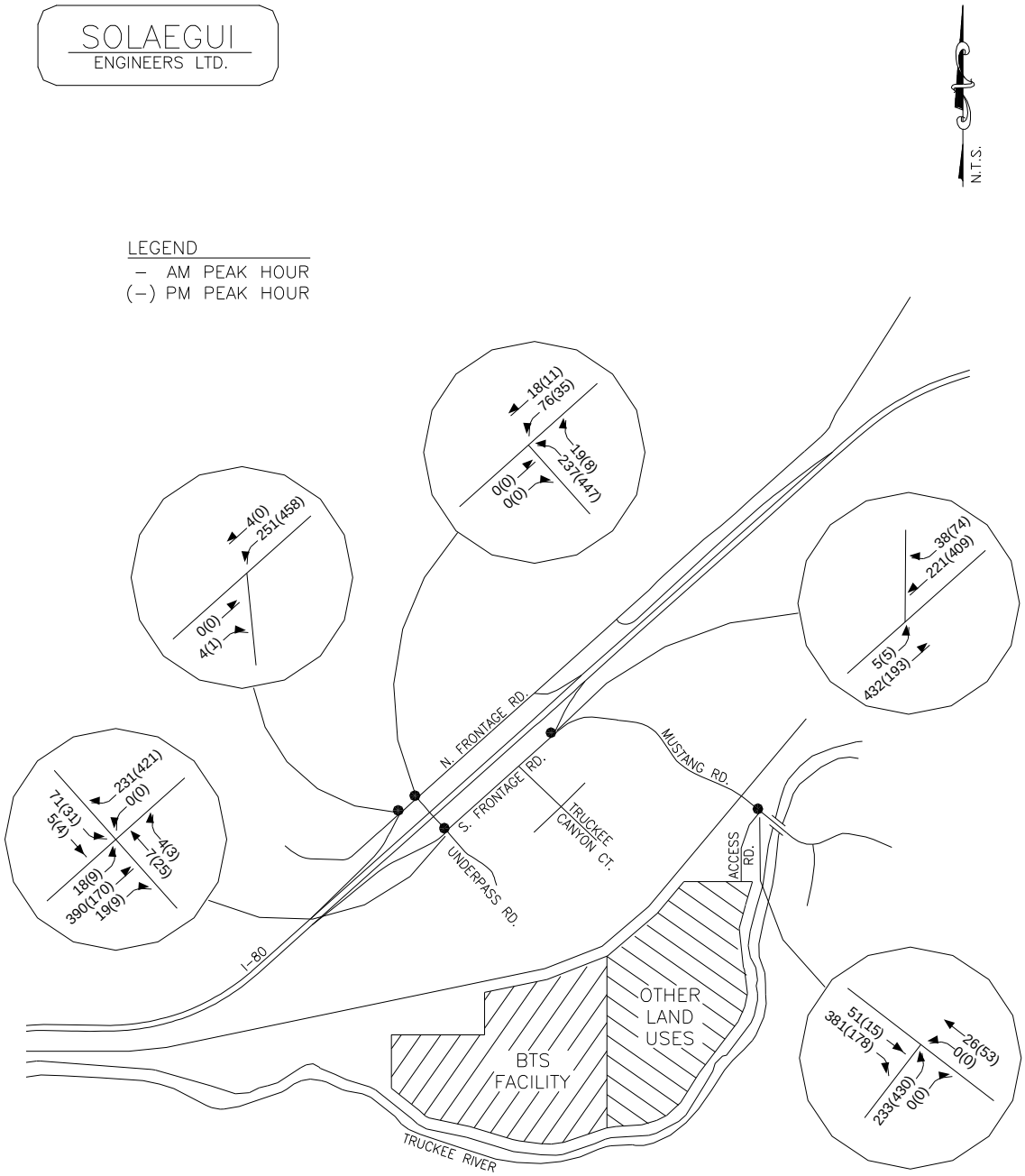
MUSTANG INDUSTRIAL DEVELOPMENT

2025 BASE TURNING MOVEMENT VOLUMES
FIGURE 7



MUSTANG INDUSTRIAL DEVELOPMENT

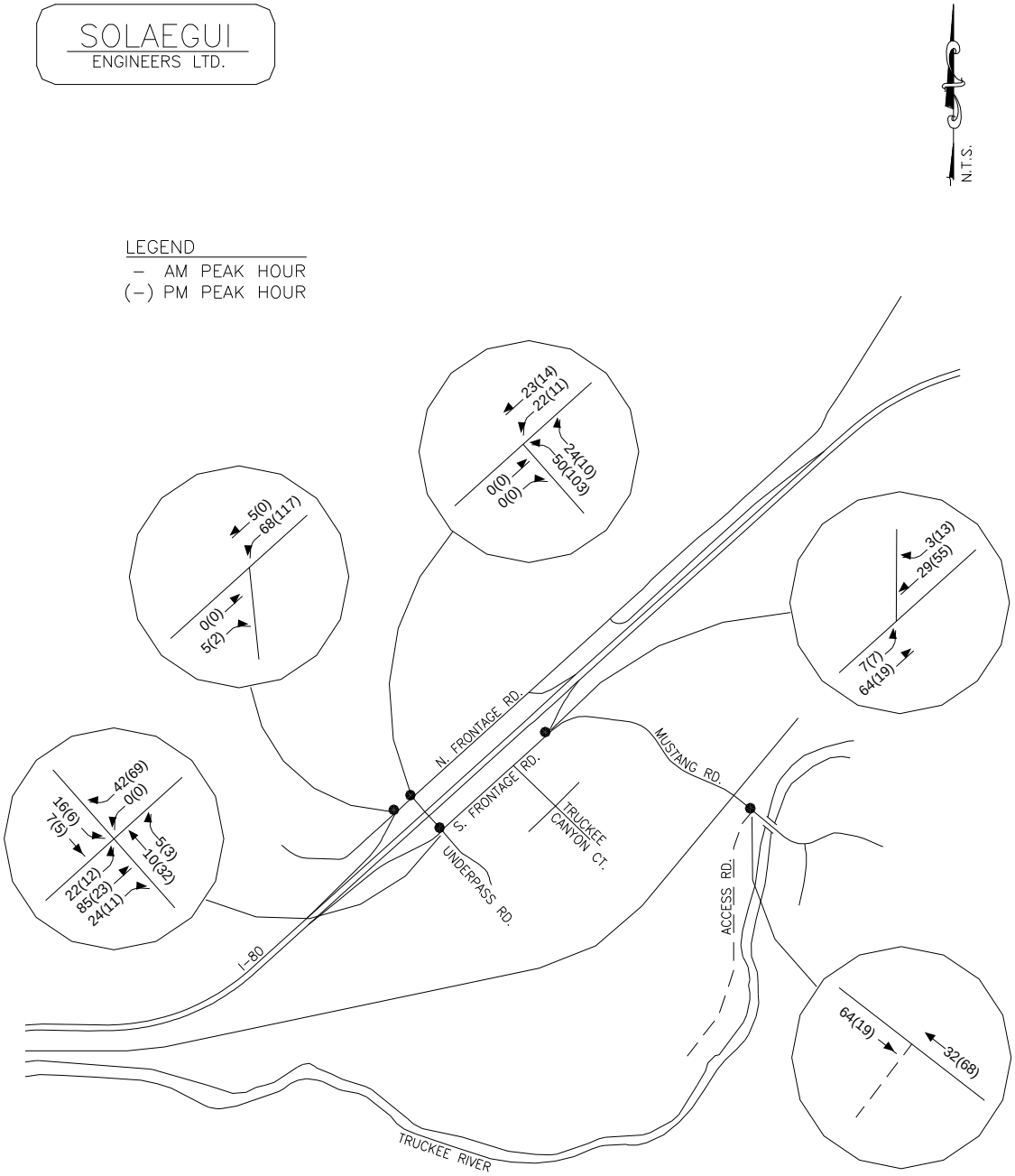
2025 BASE + BTS TURNING MOVEMENT VOLUMES
FIGURE 8



MUSTANG INDUSTRIAL DEVELOPMENT

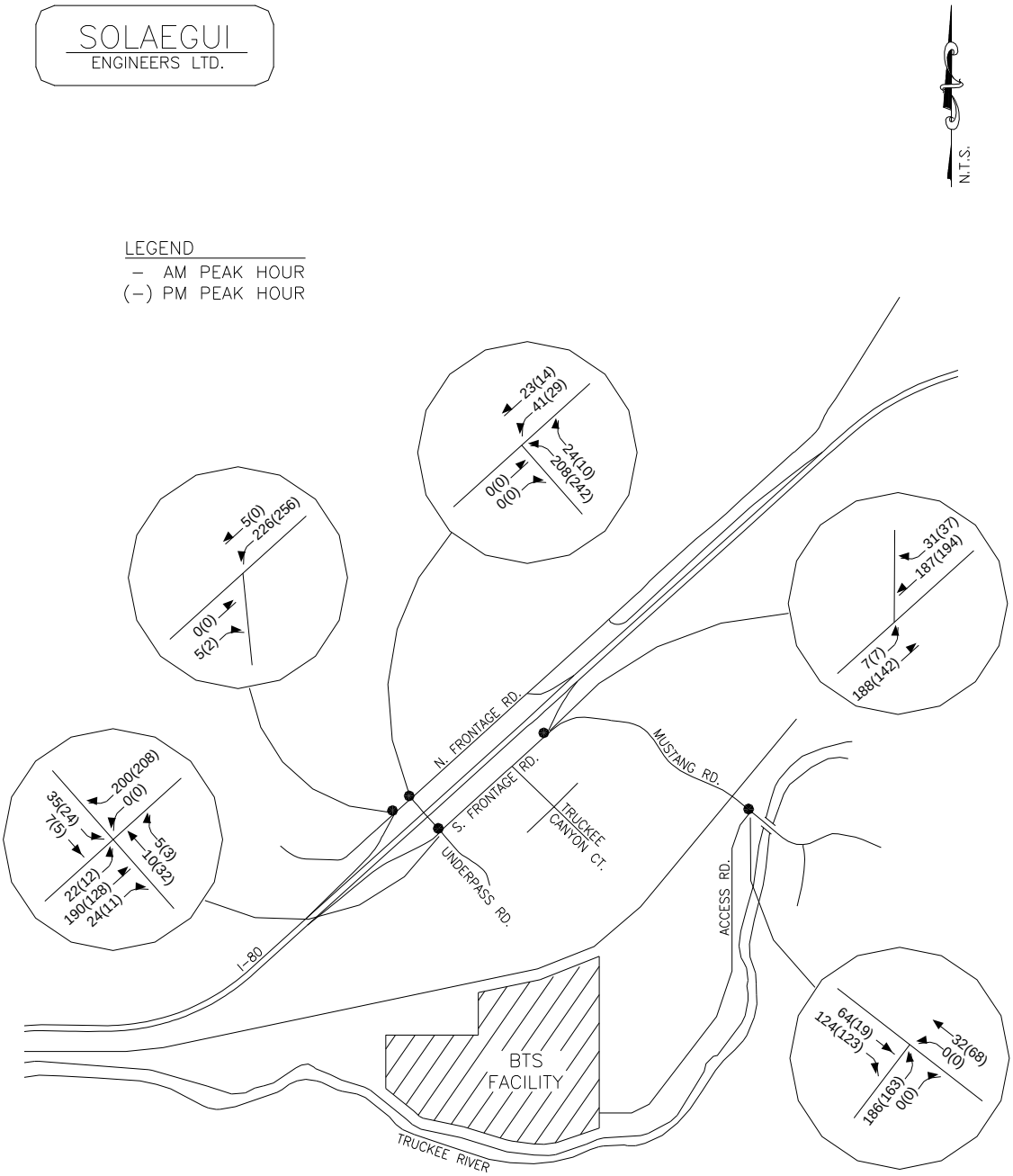
2025 BASE + BTS + OTHER TURNING MOVEMENT VOLUMES

FIGURE 9



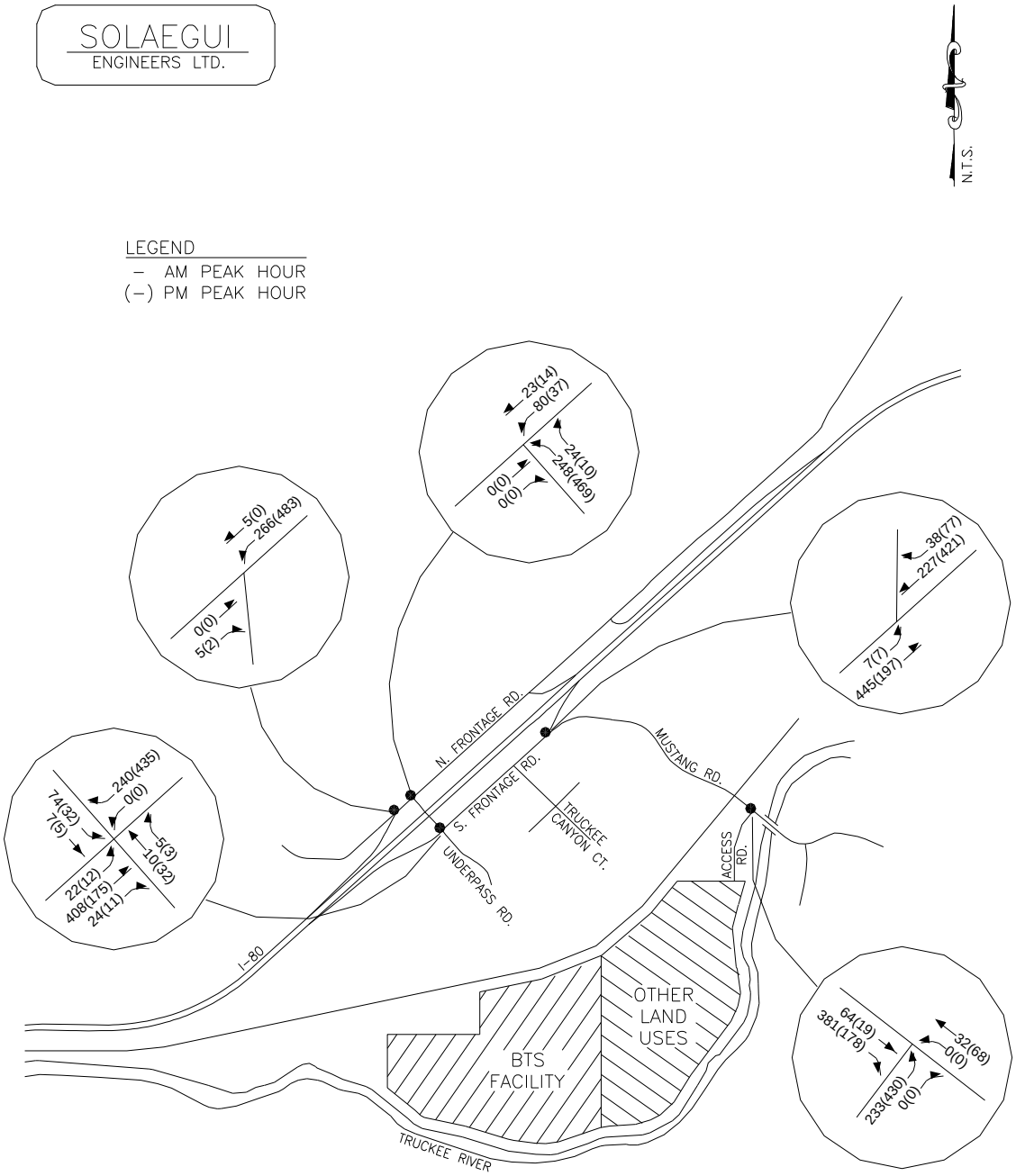
MUSTANG INDUSTRIAL DEVELOPMENT

2035 BASE TURNING MOVEMENT VOLUMES
FIGURE 10



MUSTANG INDUSTRIAL DEVELOPMENT

2035 BASE + BTS TURNING MOVEMENT VOLUMES
FIGURE 11



MUSTANG INDUSTRIAL DEVELOPMENT

2035 BASE + BTS + OTHER TURNING MOVEMENT VOLUMES

FIGURE 12

The *Highway Capacity Manual* defines level of service for stop controlled intersections in terms of computed or measured control delay for each minor movement. The level of service criteria for unsignalized intersections is shown in Table 2.

TABLE 2 LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS	
LEVEL OF SERVICE	DELAY RANGE (SEC/VEH)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Table 3 shows the level of service and delay results at the key intersections for the existing, existing plus BTS, and existing plus BTS plus other scenarios. The capacity worksheets are included in the Appendix.

TABLE 3 INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS EXISTING SCENARIOS						
	EXISTING		EXISTING + BTS		EXISTING + BTS + OTHER	
INTERSECTION	AM	PM	AM	PM	AM	PM
N. Frontage Road & Underpass Road						
Westbound Left-Thru	A7.3	A7.3	A7.4	A7.4	A7.5	A7.4
Northbound Left-Right	A8.8	A9.0	B10.7	B10.5	B12.5	B14.5
N. Frontage Road & WB On-Ramp						
Westbound Left-Thru	A7.3	A7.4	A7.8	A7.8	A7.9	A8.5
S. Frontage-EB Off-Ramp & Underpass						
Southbound Left-Thru	A7.3	A7.3	A7.4	A7.4	A7.5	A7.4
Northbound Thru-Right	A9.2	A8.8	B10.8	B10.1	C18.4	B10.9
Westbound Right	A8.4	A8.5	A9.3	A9.3	A9.6	B11.2
Eastbound Left-Thru-Right	A9.4	A9.0	B11.3	B10.5	C20.4	B11.5
S. Frontage Road & EB On-Ramp						
Eastbound Left-Right	A7.3	A7.3	A7.7	A7.7	A7.9	A8.5
Mustang Road & Project Access						
Northbound Left-Thru	N/A	N/A	A7.6	A7.5	A8.3	A7.7
Eastbound Left-Right	N/A	N/A	B10.9	B10.6	B13.6	C16.1

Table 4 shows the level of service and delay results at the key intersections for the 2025 base, 2025 base plus BTS, and 2025 base plus BTS plus other scenarios.

TABLE 4
INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS
2025 SCENARIOS

INTERSECTION	2025 BASE		2025 BASE + BTS		2025 BASE + BTS + OTHER	
	AM	PM	AM	PM	AM	PM
N. Frontage Road & Underpass Road						
Westbound Left-Thru	A7.3	A7.3	A7.4	A7.4	A7.5	A7.4
Northbound Left-Right	A9.0	A9.1	B10.9	B10.8	B12.9	C15.2
N. Frontage Road & WB On-Ramp						
Westbound Left-Thru	A7.3	A7.4	A7.8	A7.9	A7.9	A8.6
S. Frontage-EB Off-Ramp & Underpass						
Southbound Left-Thru	A7.3	A7.3	A7.4	A7.4	A7.5	A7.4
Northbound Thru-Right	A9.5	A8.9	B11.1	B10.3	C19.8	B11.1
Westbound Right	A8.5	A8.5	A9.4	A9.4	A9.6	B11.3
Eastbound Left-Thru-Right	A9.6	A9.1	B11.7	B10.7	C22.8	B11.8
S. Frontage Road & EB On-Ramp						
Eastbound Left-Right	A7.3	A7.4	A7.7	A7.8	A7.9	A8.6
Mustang Road & Project Access						
Northbound Left-Thru	N/A	N/A	A7.6	A7.6	A8.4	A7.7
Eastbound Left-Right	N/A	N/A	B11.1	B10.7	B13.9	C16.7

Table 5 shows the level of service and delay results at the key intersections for the 2035 base, 2035 base plus BTS, and 2035 base plus BTS plus other scenarios.

TABLE 5
INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS
2035 SCENARIOS

INTERSECTION	2035 BASE		2035 BASE + BTS		2035 BASE + BTS + OTHER	
	AM	PM	AM	PM	AM	PM
N. Frontage Road & Underpass Road						
Westbound Left-Thru	A7.3	A7.3	A7.5	A7.4	A7.5	A7.4
Northbound Left-Right	A9.1	A9.3	B11.2	B11.1	B13.4	C16.4
N. Frontage Road & WB On-Ramp						
Westbound Left-Thru	A7.4	A7.4	A7.9	A7.9	A8.0	A8.7

S. Frontage/EB Off-Ramp & Underpass						
Southbound Left-Thru	A7.3	A7.3	A7.4	A7.4	A7.5	A7.4
Northbound Thru-Right	A9.8	A9.0	B11.6	B10.4	C22.1	B11.3
Westbound Right	A8.5	A8.6	A9.4	A9.5	A9.7	B11.5
Eastbound Left-Thru-Right	A9.9	A9.2	B12.3	B10.8	D26.5	B12.2
S. Frontage Road & EB On-Ramp						
Eastbound Left-Right	A7.3	A7.4	A7.8	A7.8	A7.9	A8.6
Mustang Road & Project Access						
Northbound Left-Thru	N/A	N/A	A7.7	A7.6	A8.4	A7.7
Eastbound Left-Right	N/A	N/A	B11.3	B10.9	B14.3	C17.6

North Frontage Road/Underpass Road Intersection

The North Frontage Road/Underpass Road intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the south approach for all scenarios. The intersection minor movements currently operate at LOS A during both the AM and PM peak hours and will operate at LOS B or better with the addition of traffic generated by the BTS facility and other land uses. For the 2025 base scenario the minor movements operates at LOS A during both the AM and PM peak hours and will operate at LOS C or better with the addition of traffic generated by the BTS facility and other land uses. For the 2035 base scenario the minor movements will operate at LOS A during both the AM and PM peak hours and will operate at LOS C or better with the addition of traffic generated by the BTS facility and other land uses. The intersection was analyzed with the existing approach lanes for all scenarios. No improvements are recommended at the North Frontage Road/ Underpass Road intersection.

North Frontage Road/I-80 Westbound On-Ramp Intersection

The North Frontage Road/I-80 Westbound On-Ramp intersection was analyzed as an unsignalized three-leg intersection for all scenarios. The westbound left turn movement currently operates at LOS A during both the AM and PM peak hours and will continue to do so with the addition of traffic generated by the BTS facility and other land uses. For the 2025 base scenario the westbound left turn movement operates at LOS A for both the AM and PM peak hours and will continue to do so with the addition of traffic generated by the BTS facility and other land uses. For the 2035 base scenario the westbound left turn movement continues to operate at LOS A for both the AM and PM peak hours and will continue to do so with the addition of traffic generated by the BTS facility and other land uses. The intersection was analyzed with the existing approach lanes for all scenarios. No improvements are recommended at the North Frontage Road/I-80 Westbound On-Ramp intersection.

South Frontage Road/I-80 Eastbound Off-Ramp/Underpass Road Intersection

The South Frontage Road/I-80 Eastbound Off-Ramp/Underpass Road intersection is an unsignalized four-leg intersection with stop sign control at the east, west, and south approaches. The Highway Capacity Manual does not accurately model this intersection configuration. The intersection was subsequently analyzed as an unsignalized three-leg intersection with stop sign control at the east and west approaches and the northbound through and right turn volumes shifted to the westbound left turn movement.

The intersection minor movements currently operates at LOS A during both the AM and PM peak hours and will operate at LOS C or better with the addition of traffic generated by the BTS facility and other land uses. For the 2025 base scenario the intersection minor movements operate at LOS A during both the AM and PM peak hours and will operate at LOS C or better with the addition of traffic generated by the BTS facility and other land uses. For the 2035 base scenario the intersection minor movements operate at LOS A during both the AM and PM peak hours and will operate at LOS D or better with the addition of traffic generated by the BTS facility and other adjacent land uses.

The capacity analysis results indicate an anticipated queue of 200 feet at the I-80 eastbound off-ramp approach based on the 2035 base plus BTS plus other traffic volumes and the existing intersection configuration. The analysis was performed with a 20% heavy vehicle factor for the eastbound through movement. The existing off-ramp is more than 1,100 feet in length which will accommodate the anticipated queues as well as desirable deceleration length. No improvements are recommended at the South Frontage Road/I-80 Eastbound Off-Ramp/Underpass Road intersection.

South Frontage Road/I-80 Eastbound On-Ramp Intersection

The South Frontage Road/I-80 Eastbound On-Ramp intersection was analyzed as an unsignalized three-leg intersection for all scenarios. The eastbound left turn movement currently operates at LOS A during both the AM and PM peak hours and will continue to do so with the addition of traffic generated by the BTS facility and other land uses. For the 2025 base scenario the westbound left turn movement operates at LOS A during both the AM and PM peak hours and will continue to do so with the addition of traffic generated by the BTS facility and other land uses. For the 2035 base scenario the westbound left turn movement continues to operate at LOS A during both the AM and PM peak hours and will continue to do so with the addition of traffic generated by the BTS facility and other land uses. The intersection was analyzed with the existing approach lanes for all scenarios. No improvements are recommended at the South Frontage Road/I-80 Eastbound On-Ramp intersection.

Mustang Road/Project Access Intersection

The Mustang Road/Project Access intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the project access approach for all "plus BTS and other land use" scenarios. For the existing plus BTS, 2025 base plus BTS, and 2035 base plus BTS traffic volumes the intersection minor movements operate at LOS B or better during the both the AM and PM peak hours. For the existing plus BTS plus other, 2025 base plus BTS plus other, and 2035 base plus BTS plus other traffic volumes the intersection minor movements operate at LOS C or better during the both the AM and PM peak hours. The intersection was analyzed with single lanes at each approach for all scenarios.

The need for an exclusive right turn lane on Mustang Road at the project access intersection was reviewed based Washoe County Regional Transportation Commission access management standards. Mustang Road is not classified as a regional roadway and therefore an exclusive right turn lane is not required at the project access intersection. However, it is recommended that the project access be constructed with a right turn deceleration taper and radius similar to an NDOT Type 4 approach in order to serve truck traffic.

The preliminary site plan indicates that the project access roadway on Mustang Road will be located between the railroad bridge to the west and the Truckee River Bridge to the east. It is recommended that the Mustang Road/Project Access intersection be designed to meet sight distance requirements.

RECOMMENDATIONS

Traffic generated by the proposed Mustang Industrial Development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping, or traffic control improvements comply with Nevada Department of Transportation and Washoe County requirements.

It is recommended that the Mustang Road/Project Access intersection be constructed with a right turn ingress taper and radius similar to an NDOT Type 4 approach and include stop sign control at the Project Access approach.

It is recommended that the Mustang Road/Project Access intersection be designed to meet sight distance requirements.

APPENDIX

TRANSMITTAL

JOB # :

SOLAEGUI ENGINEERS, LTD
715 H Street
Sparks, Nevada 89431
775-358-1004 Voice
775-358-1098 FAX
e-mail: psolaegui@aol.com

DATE : April 7, 2015

ATTENTION : Anita Lyday

RE Mustang Industrial Development

TO: **NDOT District ll**

Quantity	Description
1	Traffic Study
1	Site Plan

REMARKS:

The traffic study is attached. The site plan in printed at 11 x 17 size. If you want a full size copy I will have one delivered to you. Thanks for your review and comment.

COPY TO:

SIGNED:

Paul Solaegui

TRANSMITTAL\Mustang Industrial NDOT

Dan Salzer

From: psolaegui@aol.com
Sent: Tuesday, April 28, 2015 10:36 AM
To: Dan Salzer
Subject: Fwd: Scannell Mustang Industrial

Dan,
We got this email acceptance of our study.
Thanks
Paul

-----Original Message-----
From: Lyday, Anita R <alyday@dot.state.nv.us>
To: 'psolaegui@aol.com' <psolaegui@aol.com>
Sent: Tue, Apr 28, 2015 7:58 am
Subject: RE: Scannell Mustang Industrial

The study appears to be satisfactory as written. Thank you for your patience.

Anita Lyday, PE, PTOE
District II Urban Traffic Engineer
Carson City and Washoe County
775-834-8320

alyday@dot.state.nv.us

From: psolaegui@aol.com [mailto:psolaegui@aol.com]
Sent: Wednesday, April 22, 2015 2:33 PM
To: Lyday, Anita R
Subject: Scannell Mustang Industrial

Anita,
A couple of weeks ago I forwarded a copy of the Mustang Industrial traffic study to you. The developer has asked if you have any comments on the study?
Thanks
Paul

This communication, including any attachments, may contain confidential information and is intended only for the individual or entity to whom it is addressed. Any review, dissemination or copying of this communication by anyone other than the intended recipient is strictly prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and delete all copies of the original message.

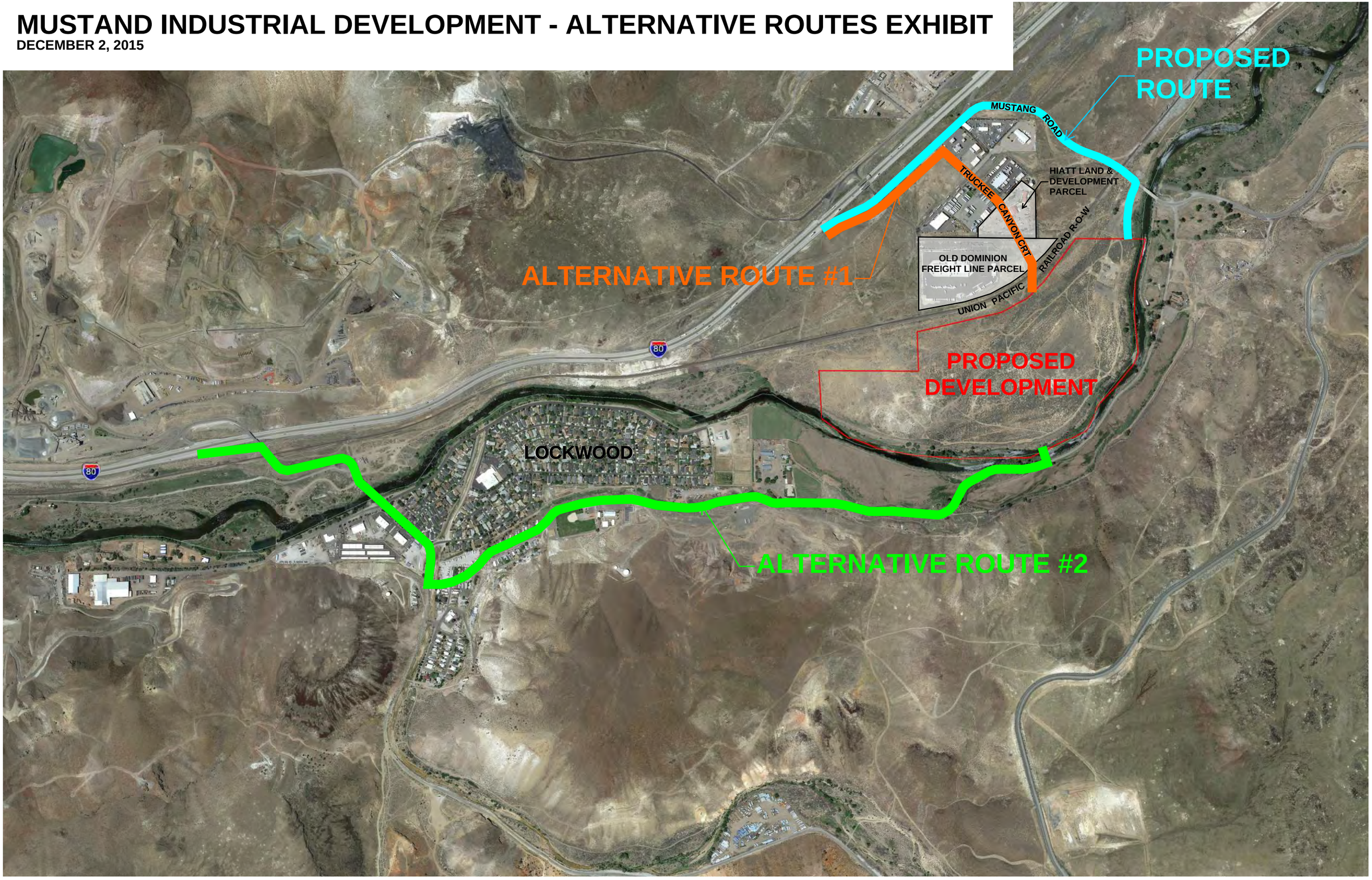
ATTACHMENT L

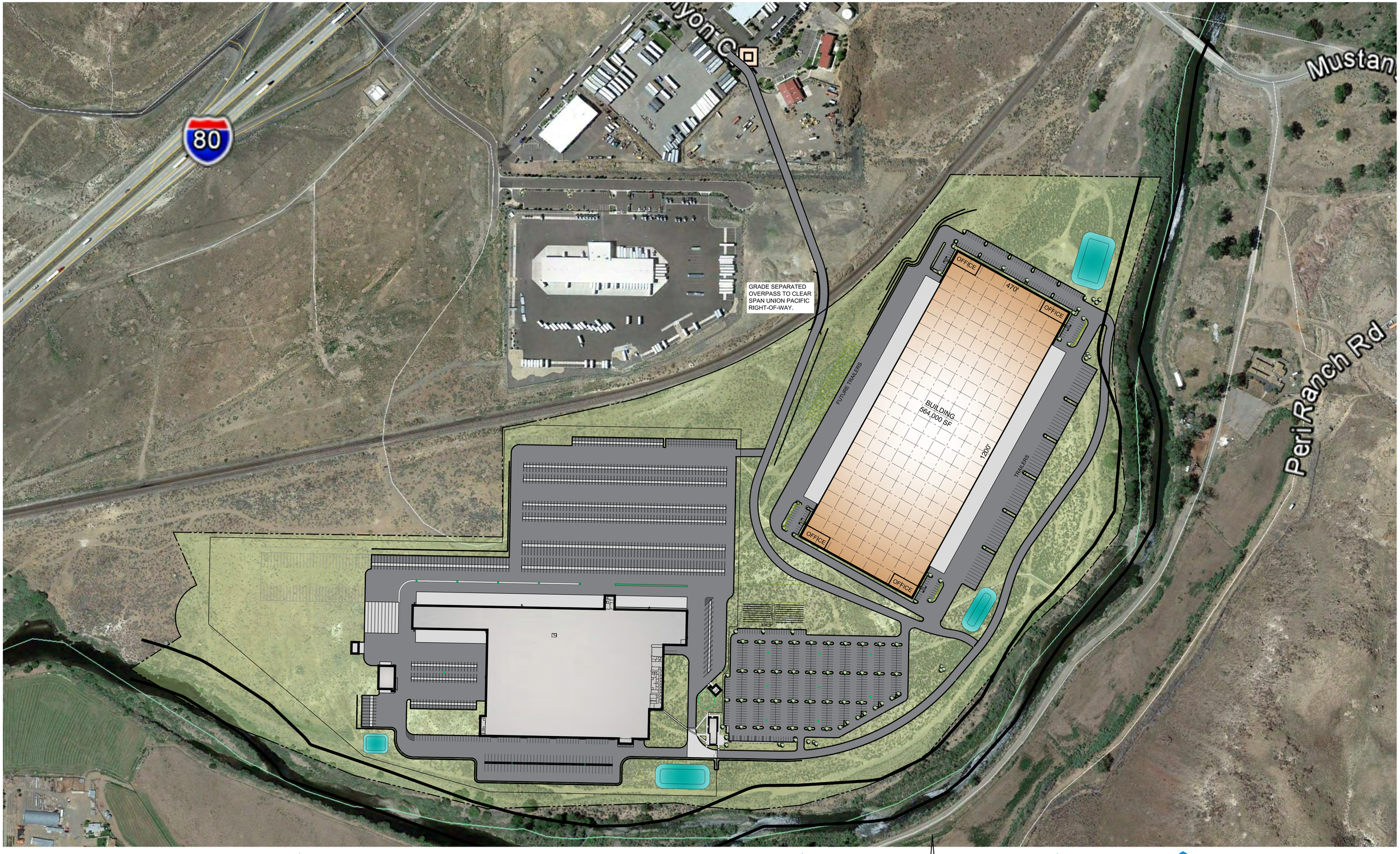
Alternative Access Route Information

- Alternative Access Exhibit (dated December 2, 2015)
- Concept Master Plan Option #2 (dated December 2, 2015)
- Letter of Support from Hiatt Land & Development (dated December 7, 2015)
- Email of Support from UPRR (dated December 16, 2015)
- Letter of Support from Old Dominion Freight Line (dated December 17, 2015)

MUSTAND INDUSTRIAL DEVELOPMENT - ALTERNATIVE ROUTES EXHIBIT

DECEMBER 2, 2015





PROPOSED:
PROJECT SITE
December 2, 2015

Concept Master Plan

Reno, NV

Option 2

SCALE IN FEET
150 0 150 300

SCANNELL
PROPERTIES

HIATT LAND AND DEVELOPMENT LTD
P.O. Box 1059
Fallon, Nevada 89406

December 7, 2015

Scannell Development Company
Attn: Dan Salzer, Development Manager
800 E. 96th Street, Suite 175
Indianapolis, IN 46240

Dear Mr. Salzer:

We understand Scannell is developing a 113-acre parcel near the intersection of Mustang Road and Interstate Highway 80 in Washoe County, Nevada. Further, we understand Scannell would like to extend Truckee Canyon Court to the south through our property located at 12251 Truckee Canyon Court, with a grade-separated railroad crossing further south. Based on the information we received, we are in support of this project and the extension of Truckee Canyon Court to access the site at the sole cost and expense of Scannell. Hiatt Land & Development Company will consider an easement or land sale to facilitate this project under mutually acceptable terms.

Sincerely,

K. Bart Hiatt
Managing Partner

Dan Salzer

From: Terrel A. Anderson <TAANDERS@UP.COM>
Sent: Wednesday, December 16, 2015 1:16 PM
To: Dan Salzer
Cc: 'nanderson@up.com'; 'Shannon Hogan'
Subject: Re: Mustang Industrial Development - Reno, NV

Dear Mr. Salzer:

As recently discussed, Scannell is developing a parcel in Washoe County, Nevada, in which improvements are required to access the site. According to the information we received, Scannell is considering the construction of a overpass that would cross a section of Union Pacific Railroad (UPRR) tracks near the I-80 / Mustang Road interchange east of Sparks, NV. UPRR requires grade separated crossings that clear span the railroad right-of-way and would consider such crossing in this location at the sole cost and expense of Scannell. A preliminary engineering agreement and full design documents meeting Union Pacific standards will be required to move this request forward.

If you have any questions, please contact at 916- 390-3693

Sincerely,

Terrel A. Anderson
Manager Industry & Public Projects
9451 Atkinson St.
Roseville CA. 95747
Office: 916 789-5134
Cell 916 390-3693
Fax: 402 233-3066
taanders@up.com

When Making a submittal to UPRR ensure that the following information is in the email subject or your plan will be rejected.
Project type, % Plans, City, State, Street, RR Milepost, Subdivision, DOT#, and Lat/Long

From: Dan Salzer <dans@scannellproperties.com>
To: '"taanders@up.com"' <taanders@up.com>
Cc: 'Shannon Hogan' <SBHogan@hollandhart.com>, '"nanderson@up.com"' <nanderson@up.com>
Date: 12/16/2015 10:59 AM
Subject: Mustang Industrial Development - Reno, NV

This email originated from outside of the company. Please use discretion if opening attachments or clicking on links.

Hi Terrel,

Thank you for your time on the phone and for considering our request. Please see attached for the revised master plan which specifically calls out the grade separated overpass to clear the right-of-way. Please let me know if you have any questions or need anything else to move this forward.

Thanks,

Dan Salzer
Scannell Properties
821 Meander Court, Medina, MN 55340
Direct: 763-331-8854 | Cell: 763-242-1595
dans@scannellproperties.com
www.scannellproperties.com

HELPING THE WORLD KEEP PROMISES.

December 17, 2015

VIA EMAIL ONLY
Scannell Development Company
Attn: Dan Salzer, Development Manager
800 E. 96th Street, Suite 175
Indianapolis, IN 46240

Dear Mr. Salzer:

Old Dominion Freight Line, Inc. ("OD") has received notice from Scannell Development Company ("Scannell") regarding the potential development of a 113-acre parcel near the intersection of Mustang Road and Interstate Highway 80 in Washoe County, Nevada. Further, that, in connection with such development, Scannell would like to extend Truckee Canyon Court to the south through OD's property located at 200 Independence Avenue, with a grade-separated railroad crossing near OD's south property line (the "Project").

Based on the information we have received, we do not object to Scannell continuing to pursue the Project, at Scannell's sole cost and expense. Should the Project be approved by the applicable authorities, OD would be willing to negotiate in good faith regarding a possible easement or land sale to facilitate completion of the Project. Provided, this letter is not intended, and shall not be deemed, to be an offer to sell or grant any interest in OD's property to Scannell or any other party, and is not intended to be a legally binding agreement.

Best regards,

J. Craig Kiser
Assistant General Counsel