EAGLE RIVER STATION
PRELIMINARY OFFSITE
CONSTRUCTION DRAWINGS
MAY 2011

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6.	SEWER PLAN AND PROFILE STA: 12+50 TO 23+50
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VICINITY MAP

1"=1200'

PART OF CONSTRUCTION WORK:

1) DEEP UTILITY CONSTRUCTION (SEWER/WATER).

2) TEMPORARY EROSION CONTROL.

3) REVEGETATION.

4) SITE CLEAN UP.

OWNERS & DEVELOPERS
TRINITY RED DEVELOPMENT, LLC.
CONTACT: JEFF McMAHON
4717 CENTRAL
KANSAS CITY, MO 64112
(816) 777-3500

ENGINEER
CONTACT: CHRIS WILLIAMS
J&K, INC.
P.O. BOX 409
EAGLE, CO 81631
(970) 328-6368 Ex 223

TOWN OF EAGLE ENGINEER
CONTACT: TOM GOSIOROWSKI
TOWN OF EAGLE
P.O. BOX 609
EAGLE, CO 81631
(970) 328-6678

EAGLE COUNTY ENGINEERING
CONTACT: GREG SCHROEDER
EAGLE COUNTY
P.O. BOX 850
EAGLE, CO 81631
(970) 328-3560

TRINITY RED DEVELOPMENT, LLC.
CONTACT: VINCE RIGGIO
PO BOX 184
EDWARDS, CO 81632
(404) 275-7000

SURVEYOR
CONTACT: JIM KUNKEL
J&K, INC.
P.O. BOX 409
EAGLE, CO 81631
(970) 328-6368 Ex 222

TOWN OF EAGLE PUBLIC WORKS
CONTACT: DUSTY WALLS
TOWN OF EAGLE
P.O. BOX 609
EAGLE, CO 81631
(970) 328-6678

UTILITY PROVIDERS

ELECTRIC:
CONTACT: LIBBY COWLING
HOLY CROSS ENERGY
3799 HIGHWAY 82, PO BOX 2150
GLENWOOD SPRINGS, CO 81602
(970) 947-5428

NATURAL GAS:
CONTACT: RON ZATARIAN
SOURCE GAS
0096 COUNTY ROAD 160
GLENWOOD SPRINGS, CO 81601
(970) 928-0408

TELEPHONE/CABLE TV:
CONTACT: JEREMIAH CUMMONS
CENTURYTEL
PO BOX 570
EAGLE, CO 81631
(970) 328-0082

DATUM USED FOR DESIGN
NGVD-29

GENERAL NOTES:

1) ALL POTABLE WATER AND SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE TOWN OF EAGLE'S CURRENT STANDARDS AND SPECIFICATIONS.

2) PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL GIVE THE TOWN OF EAGLE PUBLIC WORKS DEPARTMENT (970-328-6678 CONTACT DUSTY WALLS), 48 HOURS ADVANCED NOTICE.

3) CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.(1-800-922-1987) THE CONTRACTOR IS WARNED THAT CONFLICTS WITH EXISTING UTILITY SERVICES MAY EXIST. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES FOR LINE LOCATION. THE CONTRACTOR SHALL THEN LOCATE ALL UTILITIES (INCLUDING DEPTH). ANY CONFLICTS WITH THE PROPOSED CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER SO THAT LINE OR GRADE CHANGES CAN BE MADE TO ELIMINATE ANY CONFLICTS WITH THESE EXISTING UTILITIES. ALL EXISTING UTILITIES SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR.

4) ALL STREET CUTS IN THE TOWNS JURISDICTION OR IN EAGLE COUNTY'S JURISDICTION MUST MEET THEIR SPECIFICATIONS AND DETAILS. CONTRACTOR IS RESPONSIBLE FOR ALL ROAD CUT PERMITS.

5) STAGING AREA AND CONSTRUCTION WATER TO BE DESIGNATED BY THE TOWN OF EAGLE. THE STAGING AREA MUST BE KEPT CLEAN AND ORGANIZED AT ALL TIMES. (CONTRACTOR RESPONSIBLE FOR METERING AND ASSOCIATED WATER FEES). THE CONTRACTOR SHALL MINIMIZE ALL OFF SITE TRACKING, ALL SOIL TRACKED OFF SITE SHALL BE IMMEDIATELY CLEANED UP TO THE SATISFACTION OF THE TOWN OF EAGLE AND THE OWNER/DEVELOPER.

6) THE CONTRACTOR SHALL KEEP TWO SETS OF CONTRACT DRAWINGS MARKED UP TO FULLY INDICATE ASBUILT CONDITIONS. ONE COPY SHALL BE PROVIDED TO THE TOWN UPON COMPLETION OF THIS WORK. CONTRACTOR IS TO PROVIDE AT LEAST TWO SWINGTIES FROM PHYSICAL MONUMENTS TO ALL FITTINGS, VALVES, MANHOLES, AND SERVICES.

7) ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE STATE OF COLORADO PERMITTING PROCESS FOR "STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, AIR POLLUTANT EMISSION PERMIT, BEST MANAGEMENT PRACTICES, FUGITIVE DUST PERMIT, AND THE 404 PERMIT". THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING SAID PERMITS.

8) IF DEWATERING IS TO BE USED TO INSTALL UTILITIES THEN A STATE CONSTRUCTION DEWATERING WASTEWATER DISCHARGE PERMIT IS REQUIRED IF DISCHARGED INTO A STORM SEWER, CHANNEL, IRRIGATION DITCH OR ANY WATERS OF THE UNITED STATES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING SAID PERMIT.

9) A MANDATORY PRE-CONSTRUCTION MEETING IS TO BE HELD PRIOR TO ANY CONSTRUCTION.

10) ANY DAMAGE TO THE EXISTING CURB & GUTTER, SIDEWALKS, FENCES, CULVERTS, STORM DRAINAGE, SHALLOW UTILITIES AND DEEP UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT HIS EXPENSE AND MUST BE COMPLETED PRIOR TO THE ACCEPTANCE OF THE COMPLETED IMPROVEMENTS.

11) CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXPOSED WATER MAINS AND WATER SERVICES DURING CONSTRUCTION.

12) CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXPOSED SEWER MAINS AND SEWER SERVICES DURING CONSTRUCTION.

13) MAINTAIN 10 FEET MINIMUM HORIZONTAL SEPERATION BETWEEN OUTSIDE DIAMETERS (O.D.) OF THE WATER LINE AND SEWER LINE. OR ENCASE PER COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT REQUIREMENTS. WATER MAINS AND SERVICES SHALL BE A MINIMUM 18 INCHES ABOVE SEWER MAINS AND SERVICES OR ENCASE PER COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT.

14) EXISTING SEWER SERVICES NEED TO BE RECONNECTED AT TIME OF CONSTRUCTION.

15) NEED TO RETURN CONSTRUCTION AREA BACK TO ORIGINAL CONDITIONS.

16) THE CONTRACTOR SHALL ATTEND A MANDATORY PRE-CONSTRUCTION MEETING WITH THE OWNER/DEVELOPER, AND TOWN OF EAGLE ENGINEERING DEPARTMENT PRIOR TO THE START OF ANY CONSTRUCTION.

17) THE CONTRACTOR SHALL CONFORM TO ALL TOWN OF EAGLE RULES, REGULATIONS, AND STIPULATIONS WHILE WORKING IN THE TOWN.

18) THE CONTRACTOR SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO SIGNIFICANTLY REDUCE ANY POTENTIAL POLLUTION CAUSED BY HIS ACTIVITIES INCLUDING VEHICLE FUELING, STORAGE OF FERTILIZERS OR CHEMICALS, ETC. THE CONTRACTOR SHALL HAVE IDENTIFIED PROCEDURES FOR HANDLING POTENTIAL POLLUTANTS AND HAVE IDENTIFIED SPILL PREVENTION AND RESPONSE PROCEDURES PRIOR TO ANY ACTIVITIES AT THE PROJECT SITE.

19) THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES TO THE SATISFACTION OF THE TOWN OF EAGLE. THE CONTRACTOR SHALL MINIMIZE TRAFFIC DISRUPTIONS AND PROVIDE ADEQUATE SAFETY PRECAUTIONS TO ENSURE PUBLIC SAFETY.

20) SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE TOWN IS NOT RESPONSIBLE FOR SAFETY IN, ON, OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PART WITH ANY REGULATIONS RELATING HERETO.

21) ALL CONSTRUCTION ACTIVITIES AND EXCAVATING FOR UTILITY TRENCHES SHALL MEET OSHA REQUIREMENTS.

22) IF ANY GROUNDWATER IS ENCOUNTERED THE CONTRACTOR SHALL CONTACT OWNER/DEVELOPER, ENGINEER, AND THE PROJECT GEOTECHNICAL ENGINEER IMMEDIATELY.

23) THE CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE CHANNELS, CULVERTS, AND APPURTENANCES DURING CONSTRUCTION AS NECESSARY TO PROTECT ROADS AND PROPERTY.

24) THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL TREES, BUSHES, SHRUBS, AND GROUND COVER IN A MANNER ACCEPTABLE TO THE OWNER/DEVELOPER. COORDINATE ALL TREE REMOVAL WITH OWNER/DEVELOPER AND ENGINEER.

25) OBSERVATIONS OF THE WORK PROGRESS AND ON-SITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE OR WARRANTY BY THE ENGINEER OF THE CONTRACTOR'S CONTRACTUAL RESPONSIBILITIES.

26) ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE TOWN AND/OR THEIR REPRESENTATIVES, AND ENGINEER. THE TOWN RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DO NOT CONFORM TO THE APPROVED DRAWINGS AND/OR TOWN STANDARDS OR SPECIFICATIONS.

27) THE CONTRACTOR SHALL VERIFY EXISTING PIPE OR MANHOLE INVERTS AT TIE IN POINTS PRIOR TO CONSTRUCTION.

28) THE CONTRACTOR SHALL HAVE WATER RUNNING IN SEWER LINES DURING THE T.V. RECORDING PROCESS AND CUT SHEET FORMAT SHALL CONFORM TO TOWN STANDARD SPECIFICATIONS.

29) THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING, CONDUCTING AND SCHEDULING FOR THE TESTING OF ALL UTILITIES.

30) THE CONTRACTOR MAY NEED TO PERFORM HYDRAULIC TESTING AND DISINFECTION OF THE EXSISTING WATER LINES AS PART OF THE TESTING AND ACCEPTANCE PROCEDURE FOR THE PROPOSED WATER LINE.

31) SEWER MAINS TO BE INSTALLED IN A STRAIGHT HORIZONTAL ALIGNMENT FROM MANHOLE TO MANHOLE.

32) ALL SEWER LINES SHALL HAVE A MINIMUM OF 4.5 FEET OF COVER.

CALL BEFORE YOU DIG - IT'S THE LAW!
(800) 922-1987 or (800) 833-6417

APPROVED BY THE TOWN OF EAGLE
BY: ____________
DATE: ____________

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LAND SURVEYING
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STRUCTURAL ENGINEERING

POST OFFICE BOX 409
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6368
F 970 328 1035
WWW.JKINC.COM

NO.	DATE	DESCRIPTION	BY	CHK
1	11-04-11	ISSUED FOR REVIEW		
A	11-08-11	REVISED		

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: COVER

STAMP

JOB NO. EA07183

SHEET NO. 1

INTEGRITY
FROM THE GROUND UP

EAGLE RIVER STATION
OVERALL LEGEND

PROPOSED LEGEND

PROPERTY DESCRIPTION
- PROPERTY/BOUNDARY LINE
- LOT LINE
- RIGHT OF WAY
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- FLOWLINE OF DITCH
- FENCE LINE
- MAJOR CONTOUR 6530
- MINOR CONTOUR 6549
- BUILDING SETBACK
- SUBDIVISION LOT NUMBER LOT 37
- SUBDIVISION BLOCK NUMBER (2)
- STREET ADDRESS 2871
- WETLANDS
- RIPARIAN

ROADWAY DESCRIPTION
- ASPHALT HATCH

SHALLOW UTILITIES DESCRIPTION
- COMMON UTILITY
- ELECTRIC MAIN
- 7' ELECTRIC VAULT
- TRANSFORMER (3-PHASE)
- TRANSFORMER (1-PHASE)
- 4' ELECTRIC VAULT
- OVERHEAD UTILITY LINE
- ELECTRIC SERVICE
- TELEPHONE MAIN
- TELEPHONE SERVICE
- TELEPHONE PEDESTAL
- CABLE TV MAIN
- CABLE TV SERVICE
- CABLE TV PEDESTAL
- FIBER OPTIC LINE
- LIGHT POLE
- UTILITY POLE
- GUY WIRE
- GAS MAIN
- GAS SERVICE
- PHOTO CELL w/ DISCONNECT
- TELEMETRY PULL BOX

WATER DESCRIPTION
(LINEAR FEET)
- MAIN LINE (SIZE/MATERIAL VARIES) 20 LF 12" D.I.P.
- WATER SERVICE w/ CURB STOP
- HYDRANT
- BEND w/THRUST BLOCK
- BEND w/MECHANICAL RESTRAINTS
- VALVE
- METER MANHOLE (M)
- AIR RELIEF VALVE (A)
- BOOSTER PUMP STATION (BPS)
- PRESSURE REDUCING VALVE (PRV)
- WELL
- REDUCER
- PLUG
- STORAGE TANK (TANK)

DRAINAGE & EROSION CONTROL DESCRIPTION
- STRAW BALES
- SEDIMENT BARRIER
- SILT FENCE
- DRAINAGE FLOW DIRECTION
- SLOPE ARROW 2.4 %
- RIP RAP

SANITARY SEWER DESCRIPTION
- MAIN LINE (SIZE/MATERIAL VARIES) 20 LF 8" PVC
- SERVICE LINE
- SANITARY SEWER MANHOLE (S)
- FLOW DIRECTION (PLAN)

STORM SEWER DESCRIPTION
- STORM PIPE
- TYPICAL INLET BOX
- TYPICAL CATCH BASIN (C)
- STORM MANHOLE (M)
- FLARED END SECTION
- STORM PIPE END w/ RIPRAP

EXISTING LEGEND

PROPERTY DESCRIPTION
- PROPERTY/BOUNDARY LINE
- PROPERTY CORNER MARKER
- RIGHT OF WAY
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- FLOWLINE OF DITCH
- FENCE LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- FLOOD PLAIN
- WETLANDS
- RIPARIAN
- TREE/VEGETATION LINE
- DECIDUOUS TREE w/ TRUNK DIA. 8", 12"
- CONIFER TREE w/ TRUNK DIA. 10", 12"

ROADWAY DESCRIPTION
- DIRT ROAD
- EDGE OF PAVEMENT
- GUTTER FLOW LINE
- TOP BACK OF CURB
- CENTERLINE OF ROAD
- BACK OF WALK
- HANDICAP RAMP
- SIGN
- STONE WALL
- SIDEWALK

WATER DESCRIPTION
- MAIN LINE
- HYDRANT
- FROST FREE HYDRANT
- VALVE
- METER MANHOLE
- AIR RELIEF VALVE
- ALTITUDE VALVE
- BOOSTER PUMP STATION
- PRESSURE REDUCING VALVE
- WELL
- WATER SERVICE/CURB STOP

IRRIGATION DESCRIPTION
- SPRINKLER
- IRRIGATION SATELLITE BOX

SHALLOW UTILITIES DESCRIPTION
- COMMON UTILITY
- ELECTRIC MAIN
- 7' ELECTRIC VAULT
- TRANSFORMER (3-PHASE)
- TRANSFORMER (1-PHASE)
- 4' ELECTRIC VAULT
- ELECTRIC MANHOLE
- OVERHEAD UTILITY LINE
- ELECTRIC SERVICE
- TELEPHONE MAIN
- TELEPHONE SERVICE
- TELEPHONE PEDESTAL
- CABLE TV MAIN
- CABLE TV SERVICE
- CABLE TV PEDESTAL
- FIBER OPTIC LINE
- LIGHT POLE
- UTILITY POLE
- GUY WIRE
- GAS MAIN
- GAS SERVICE

- WOOD POST UTILITY MARKER
- 4", 3", & 2" PVC STUB

STORM SEWER DESCRIPTION
- STORM PIPE
- TYPE R INLET
- TYPE 13C INLET
- STORM MANHOLE

SANITARY SEWER DESCRIPTION
- MAIN LINE
- SERVICE LINE
- SANITARY MANHOLE
- FLOW DIRECTION (PLAN)

MISCELLANEOUS
- BOLLARD
- RETAINING WALL

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LAND SURVEYING
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POST OFFICE BOX 409
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6349
F 970 328 1635
WWW.JKINC.COM

NO.	DATE	DESCRIPTION	BY
1	11.26.07	GRADING PLAN, TESC COMMENTS AND MISC. CLEAN UP	AJS

REFERENCE

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: OVERALL LEGEND

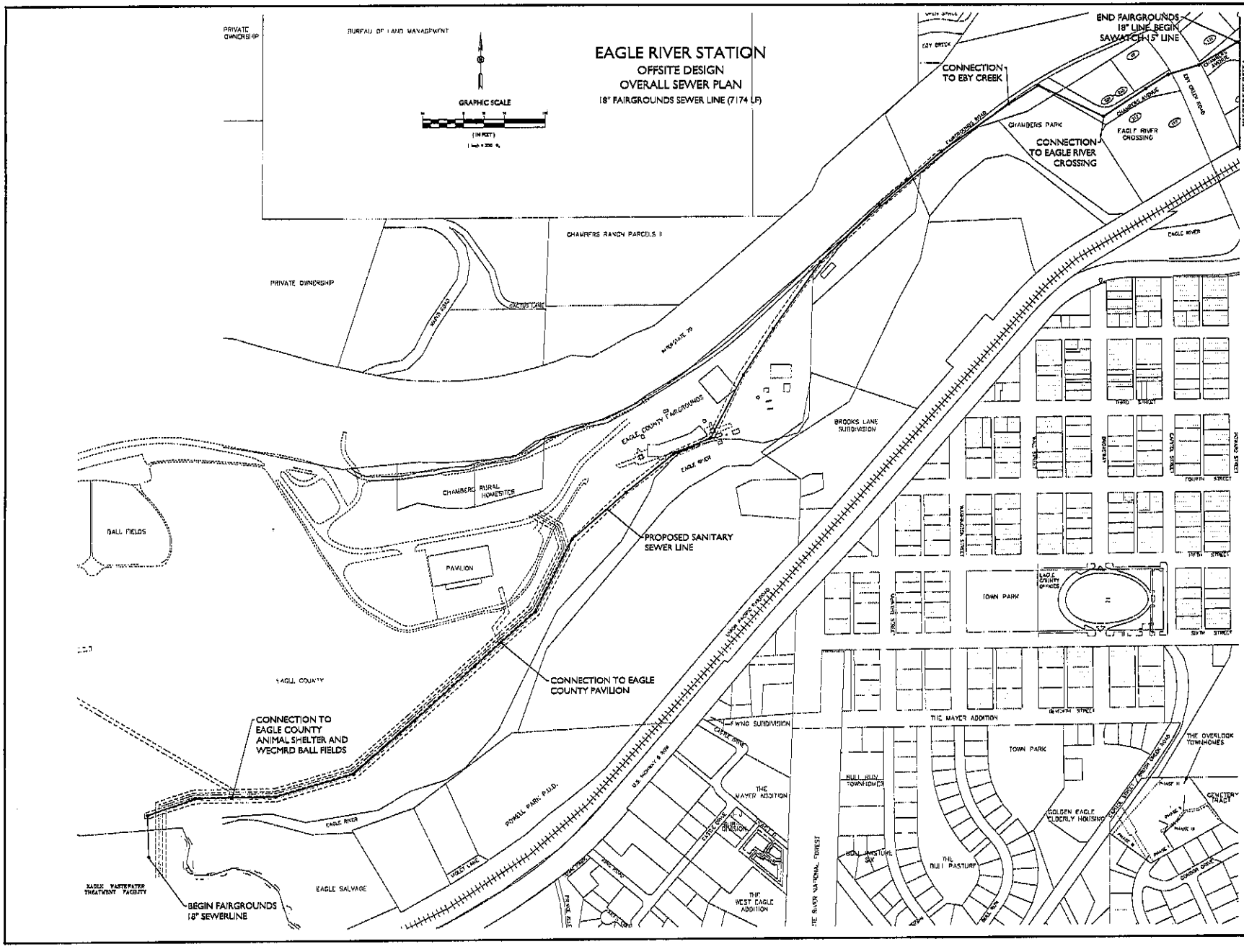
STAMP

JOB NO. EA07183

SHEET NO. 2

INTEGRITY FROM THE GROUND UP

P:\2006 Projects\EA06118\dwg\PLANS\LEGEND\EA06118-Legend.dwg, OVERALL LEGEND, 12/2/2007 8:45:36 PM, tommy, Adobe PDF, ANSI B (11.00 x 17.00 Inches)



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POST OFFICE BOX 401
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6348
F 970 328 1635
WWW.JK-INC.COM

NO.	DATE	DESCRIPTION	BY	CHK
A	10/2012	UPDATED PER CITY COMMENTS DATED 11-7-12	JAA	CHK
1	10/31/12	PER FIELD MEET NOTES	JAA	CHK

NETWORK ISSUE

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: OVERALL SEWER PLAN

STAMP

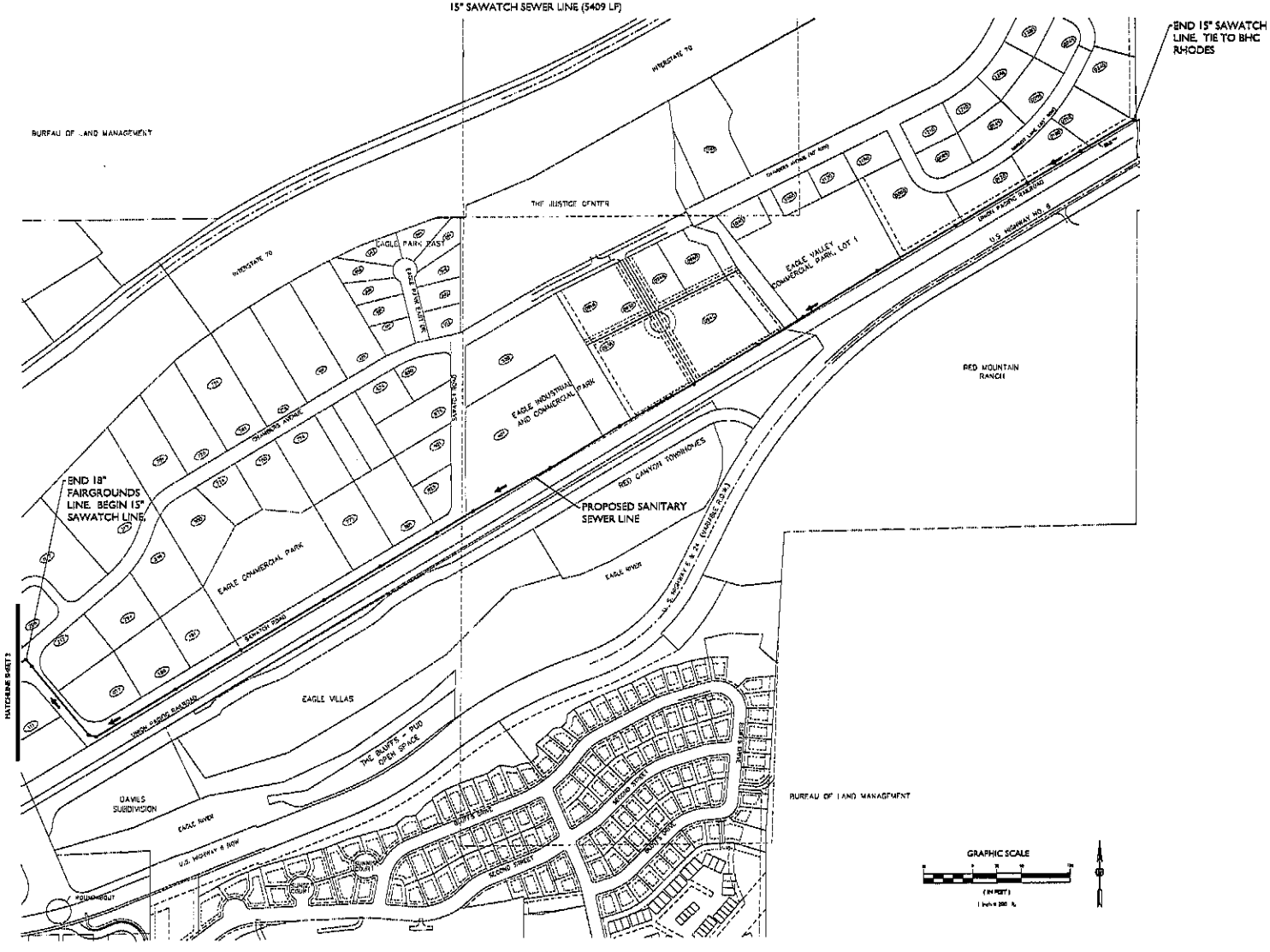
JOB NO. EA06146

SHEET NO. 3

INTEGRITY FROM THE GROUND UP

P:\2006 Projects\EA06146\Work\PLAN\Sewer\Sht03 Overall.dwg, 10/31/2012 8:43:49 PM, Adobe PDF

EAGLE RIVER STATION
OFFSITE DESIGN
OVERALL SEWER PLAN
15" SAWATCH SEWER LINE (5409 LF)



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POST OFFICE BOX 409
1386 CHAMBERS AVE., SUITE 300
EAGLE, COLORADO 81631
P 970 328 6266
F 970 328 1033
WWW.JKINC.COM

REVISIONS				
A	11/29/07	UPDATED PER TOE COMMENTS DATED 11-27-07	JAA	CW
B	12/11/07	PER PRELIMINARY PLANS	JAA	CW
NO.	DATE	DESCRIPTION	BY	CHK

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: OVERALL SEWER PLAN

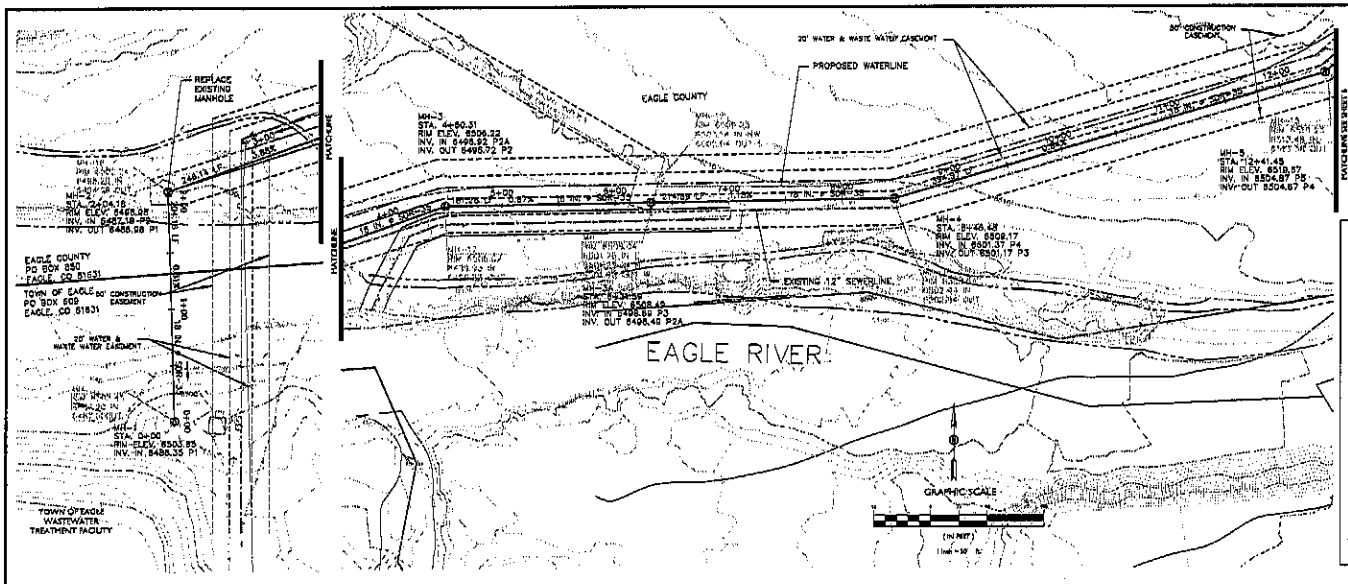
STAMP

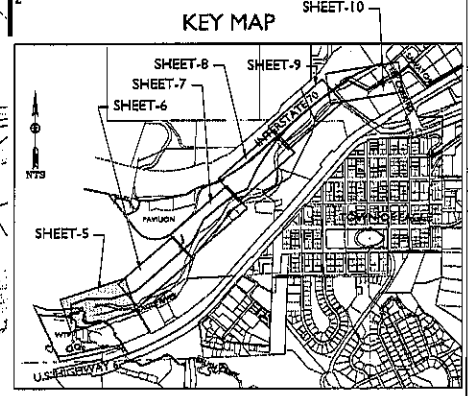
JOB NO. EA06146

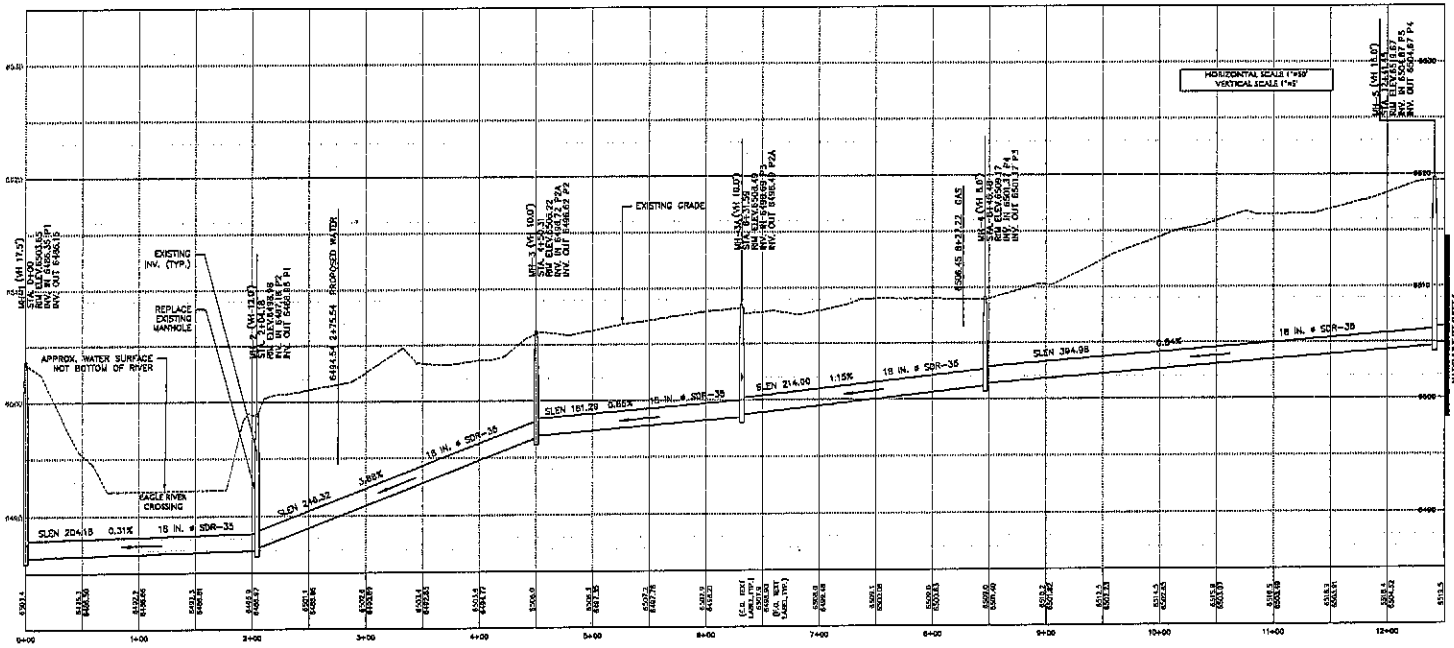
SHEET NO. 4

INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 0+00 TO 12+50







NOTE:
- EXISTING SEWER MANHOLE
- PROPOSED SEWER MANHOLE

NOTES:
1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.
3. CONTACT EAGLE COUNTY PRIOR TO CONSTRUCTION.

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ARCHITECTURE
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LAND SURVEYING
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PLANNING
STRUCTURAL ENGINEERING
POST OFFICE BOX 499
1286 CHAMBERS AVE., SUITE 200
EAGLE, COLORADO 81631
P 970.328.6268
F 970.328.1888
WWW.JK-INC.COM

REVISIONS						
	NO.	DATE	DESCRIPTION	JMK	PMV	CWE
A	1	10/31/07	UPDATED PER TOE COMMENTS DATED 10/19/07	JMK	PMV	CWE
			FOR PRELIMINARY PLANS			

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 0+00 TO 12+50

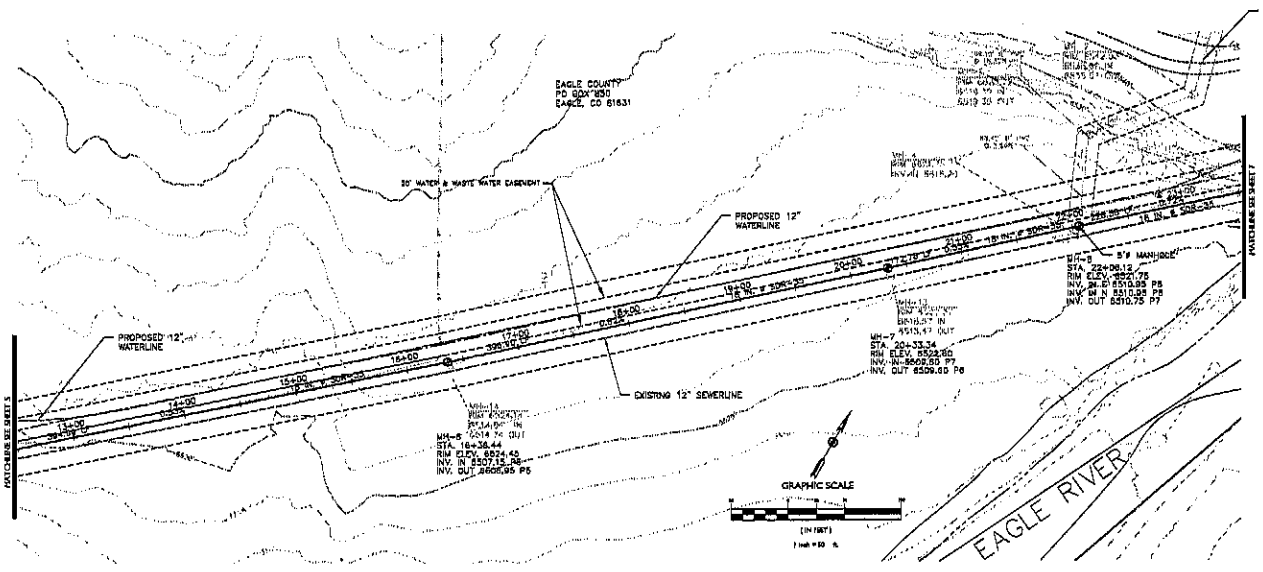
STAMP

JOB NO. EA06146

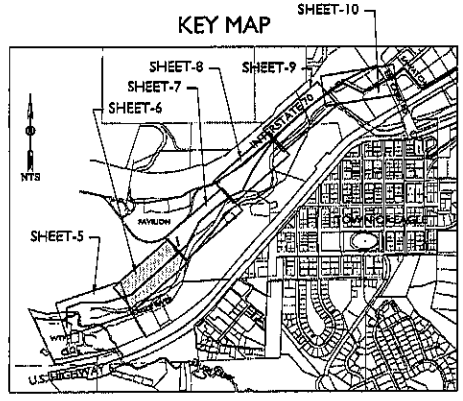
SHEET NO. 5

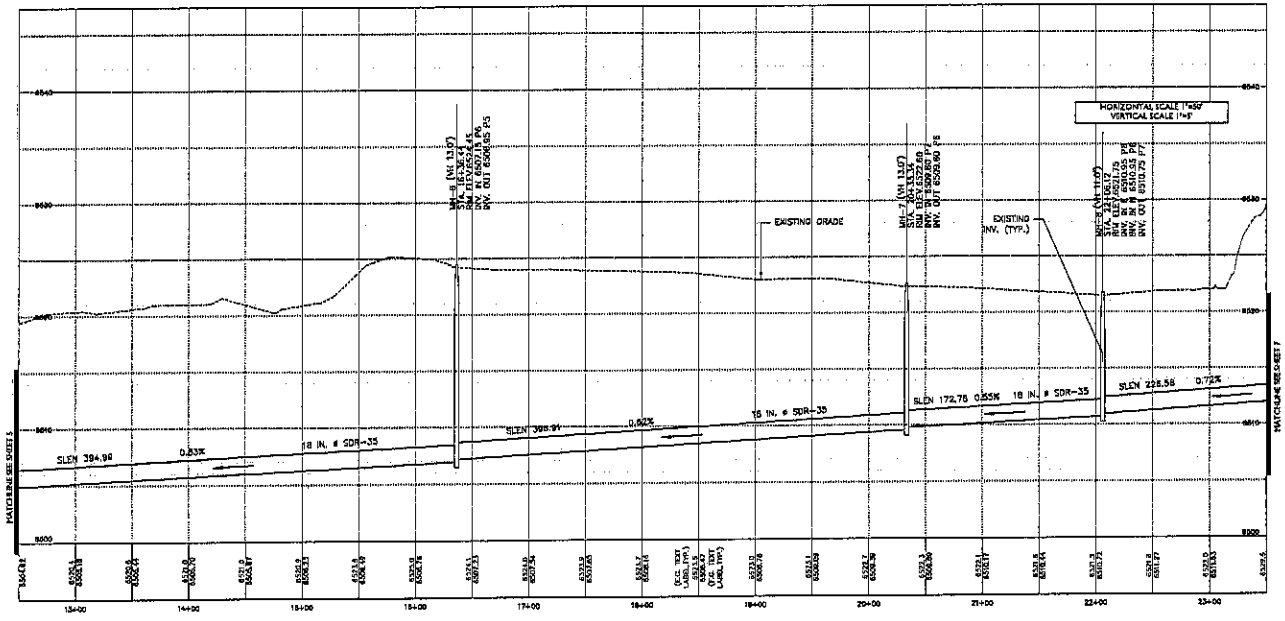
INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 12+50 TO 23+50



KEY MAP





NOTE:
- EXISTING SEWER MANHOLE
- PROPOSED SEWER MANHOLE

NOTES:
1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.
3. CONTACT EAGLE COUNTY PRIOR TO CONSTRUCTION.

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ARCHITECTURE
CIVIL ENGINEERING
LAND SURVEYING
MAPPING
PLANNING
STRUCTURAL ENGINEERING
POST OFFICE BOX 409
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6348
F 970 328 1035
WWW.JK-INC.COM

NO.	DATE	DESCRIPTION	BY	CHK
1	10/13/07	ADDITIONS PER TOA COMMENTS/OFFSITE	JMA	CHK
2	12/12/07	PER PRELIMINARY PLAT	JMA	CHK

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 12+50 TO 23+50

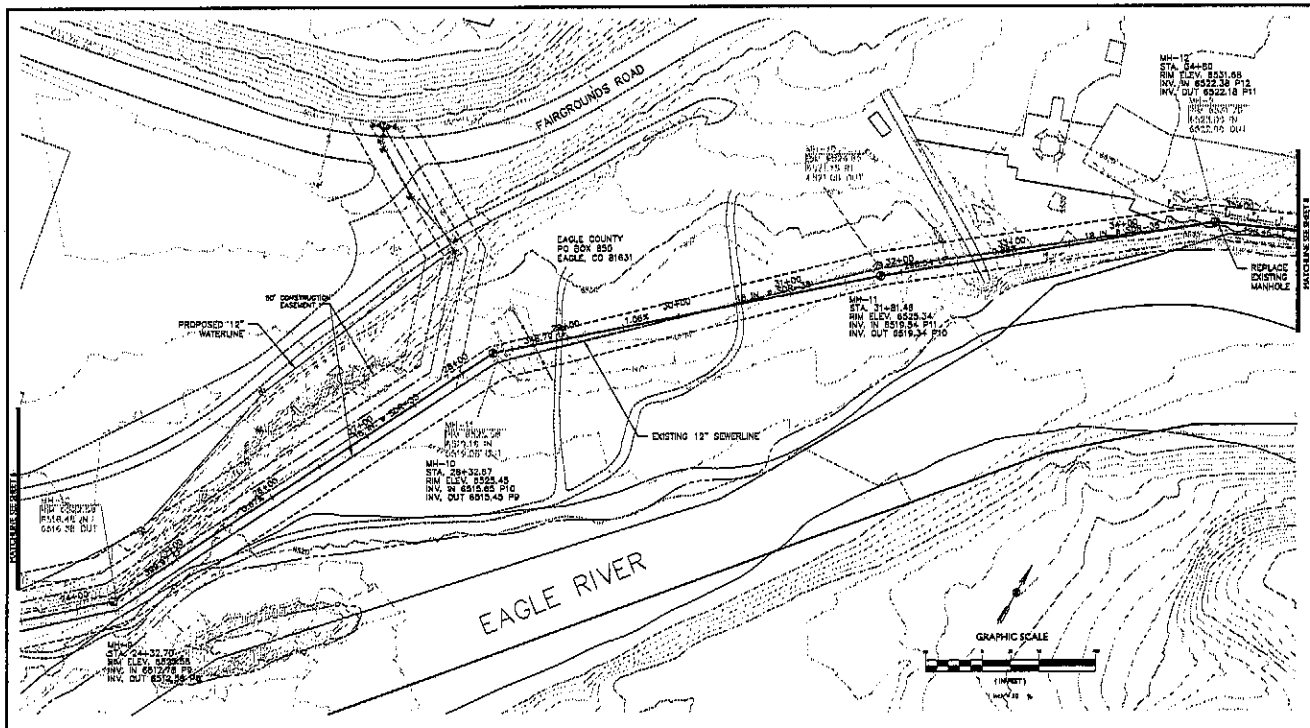
STAMP

JOB NO. EA06146

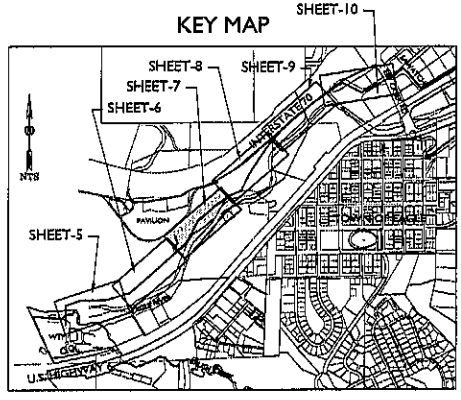
SHEET NO. 6

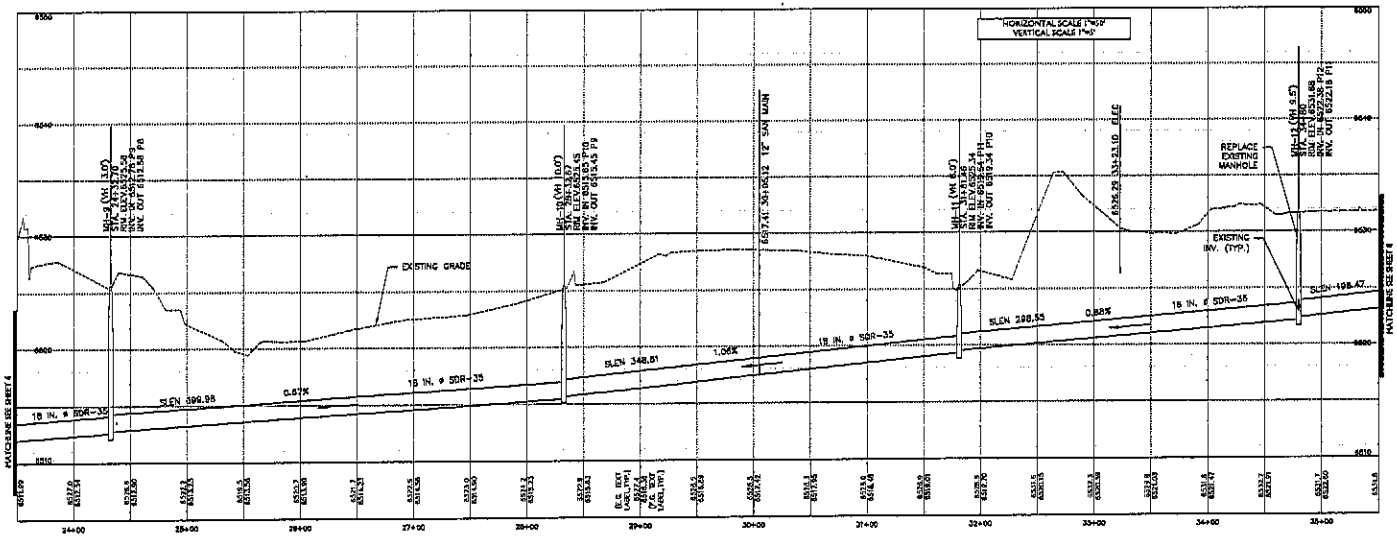
INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 23+50 TO 35+50



KEY MAP





NOTE:
- (E) EXISTING SEWER MANHOLE
- (P) PROPOSED SEWER MANHOLE

NOTES:
1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.
3. CONTACT EAGLE COUNTY PRIOR TO CONSTRUCTION.

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EAGLE, COLORADO 81631
P 970 328 6368
F 970 328 1635
www.jk-inc.com

NO.	DESCRIPTION	DATE	BY	CK'D
1	100% SUBMITTAL	10/21/22	JMA	CW
A	REVISED UPDATED PER FIRE COMMENTS REVIEW	12/21/22	JMA	CW

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 23+50 TO 35+50

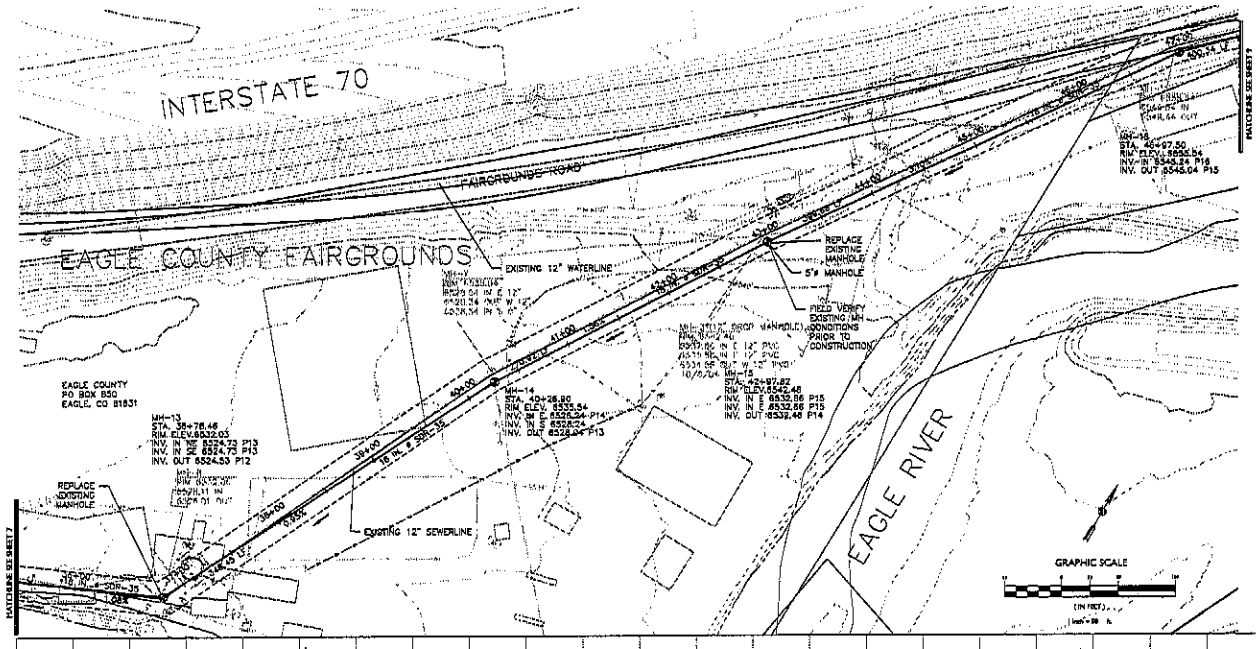
STAMP

JOB NO. EA06146

SHEET NO. 7

INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 35+00 TO 47+50



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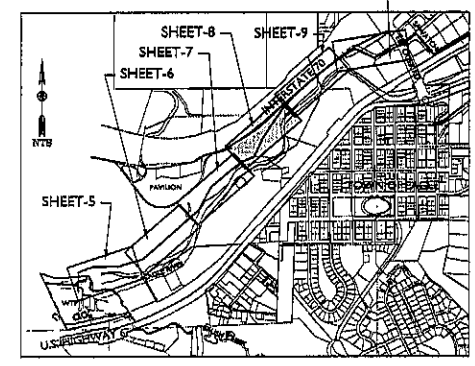

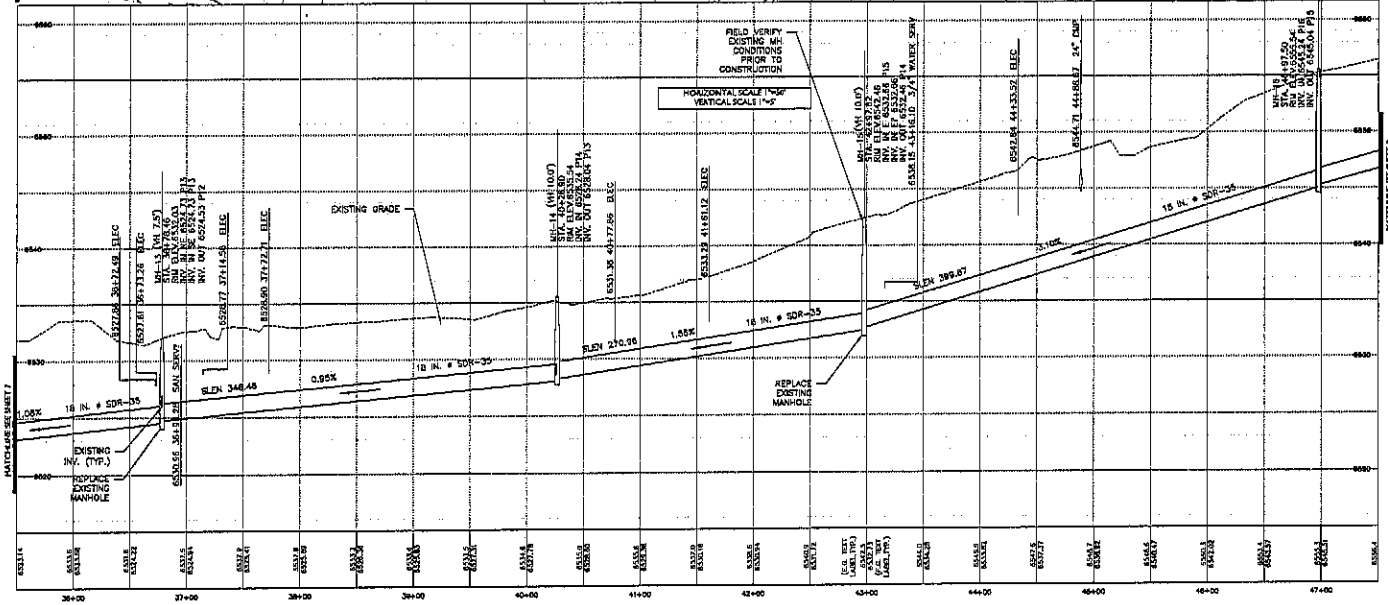

NOTE:
- EXISTING SEWER MANHOLE
- PROPOSED SEWER MANHOLE

NOTES:
1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.
3. CONTACT EAGLE COUNTY PRIOR TO CONSTRUCTION.

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EAGLE, COLORADO 81631
P 970 328 6368
F 970 328 1033
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REVISIONS				
A	10/24/07	UPDATED PER TOE COMMENTS DATED 10/17/07	JMA	CW
1	10/31/07	25% PLAN/PROJECT PLANS	JMA	CW
NO.	DATE	DESCRIPTION	BY	CHK

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 35+50 TO 47+50

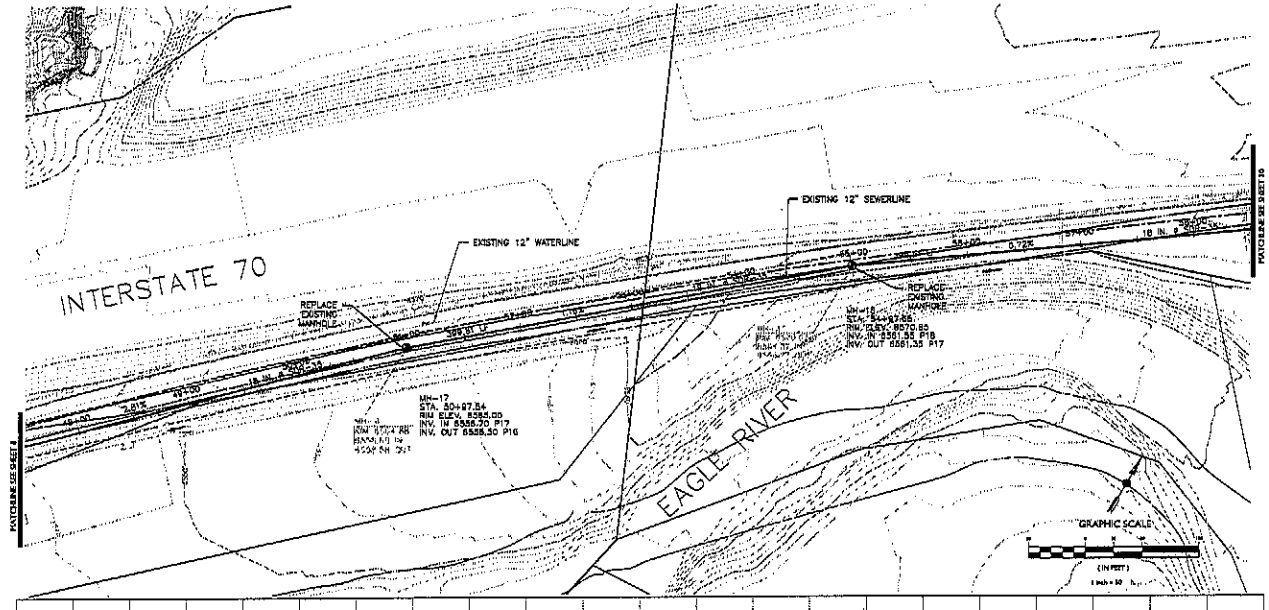
STAMP

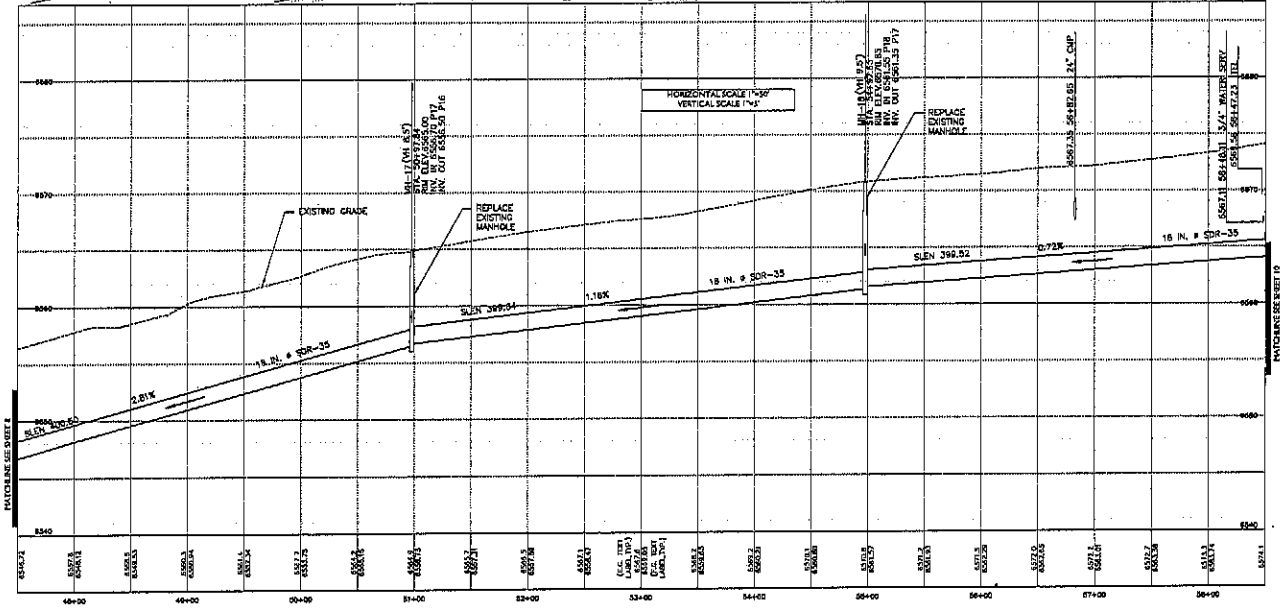
JOB NO. EA06146

SHEET NO. 8

INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 47+50 TO 58+50





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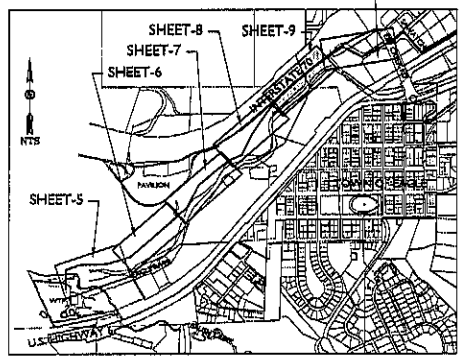

NOTES:

1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.
3. CONTACT EAGLE COUNTY PRIOR TO CONSTRUCTION.

NOTE:

(E) EXISTING SEWER MANHOLE

(P) PROPOSED SEWER MANHOLE

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1396 CHAMBERS AVE., SUITE 300
EAGLE, COLORADO 81631
P 970.328.6346
F 970.328.1803
www.jk-inc.com

REVISIONS				
	DATE	DESCRIPTION	BY	CHK
A	11/09/07	PER FIRE COMMENTS DATED 10/31/07	JMA	CHK
1	12/05/07	SDS FINAL SUBMITTAL	JMA	CHK
			BT	CHK

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

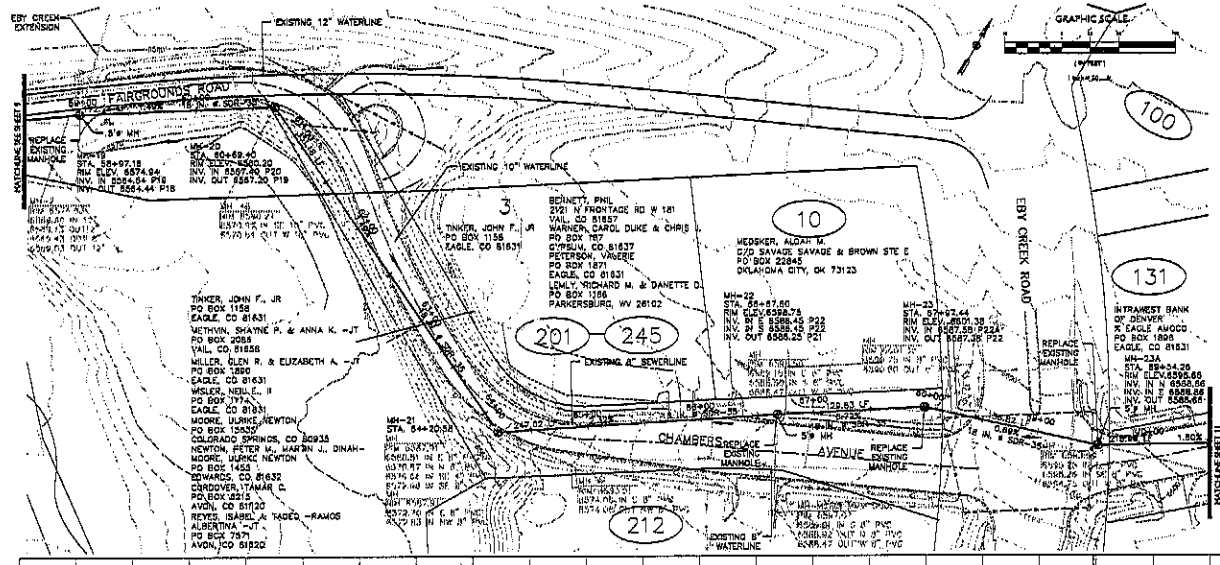
TITLE: PROPOSED SANITARY SEWER LINE STATION 47+50 TO 58+50

STAMP

JOB NO. EA06146

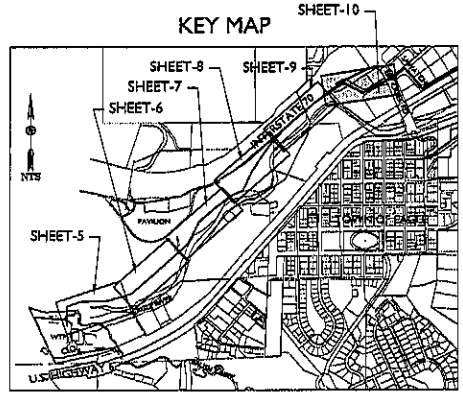
SHEET NO. 9

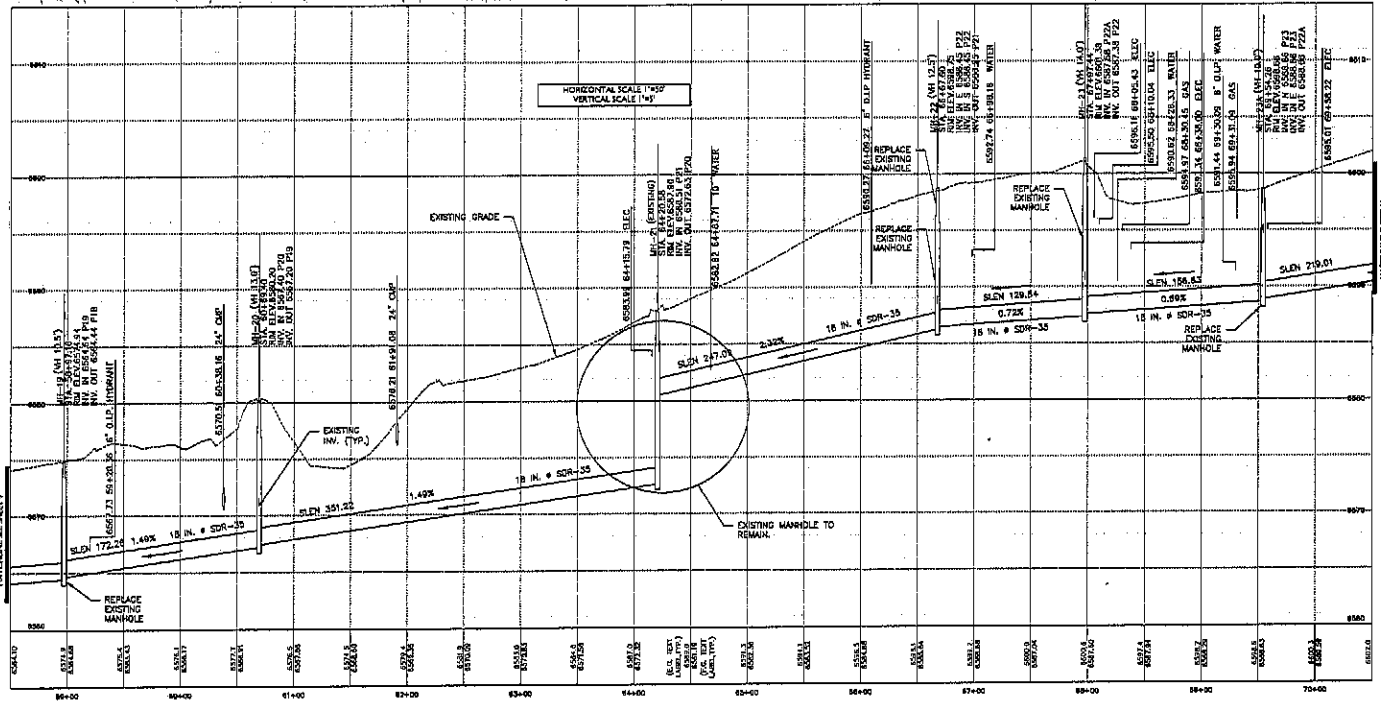
INTEGRITY FROM THE GROUND UP



EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 58+50 TO 70+50

KEY MAP





NOTE:
EXISTING SEWER MANHOLE
PROPOSED SEWER MANHOLE

NOTES:
1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.
3. CONTACT EAGLE COUNTY PRIOR TOCONSTRUCTION.

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P 970 328 6346
F 970 328 1033
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NO.	DATE	DESCRIPTION	BY	CHK
1	10/24/07	UPDATED PER COMMENTS DATED 10/15/07	JAA	CW
		FOR PRELIMINARY PLANS	JAA	CW

REVISIONS / ISSUE

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 58+50 TO 70+50

STAMP

JOB NO. EA06146

SHEET NO. 10

INTEGRITY FROM THE GROUND UP

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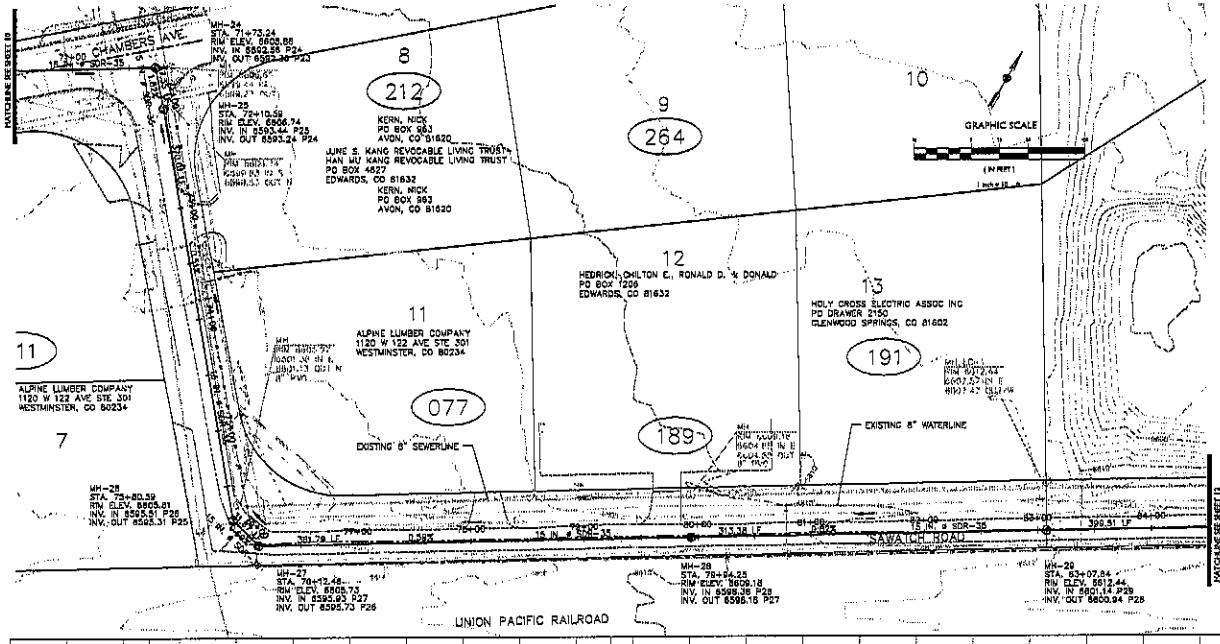
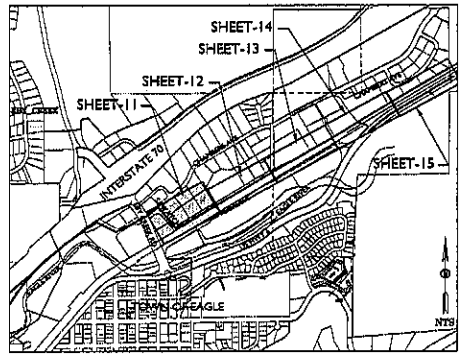
EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 70+50 TO 84+50

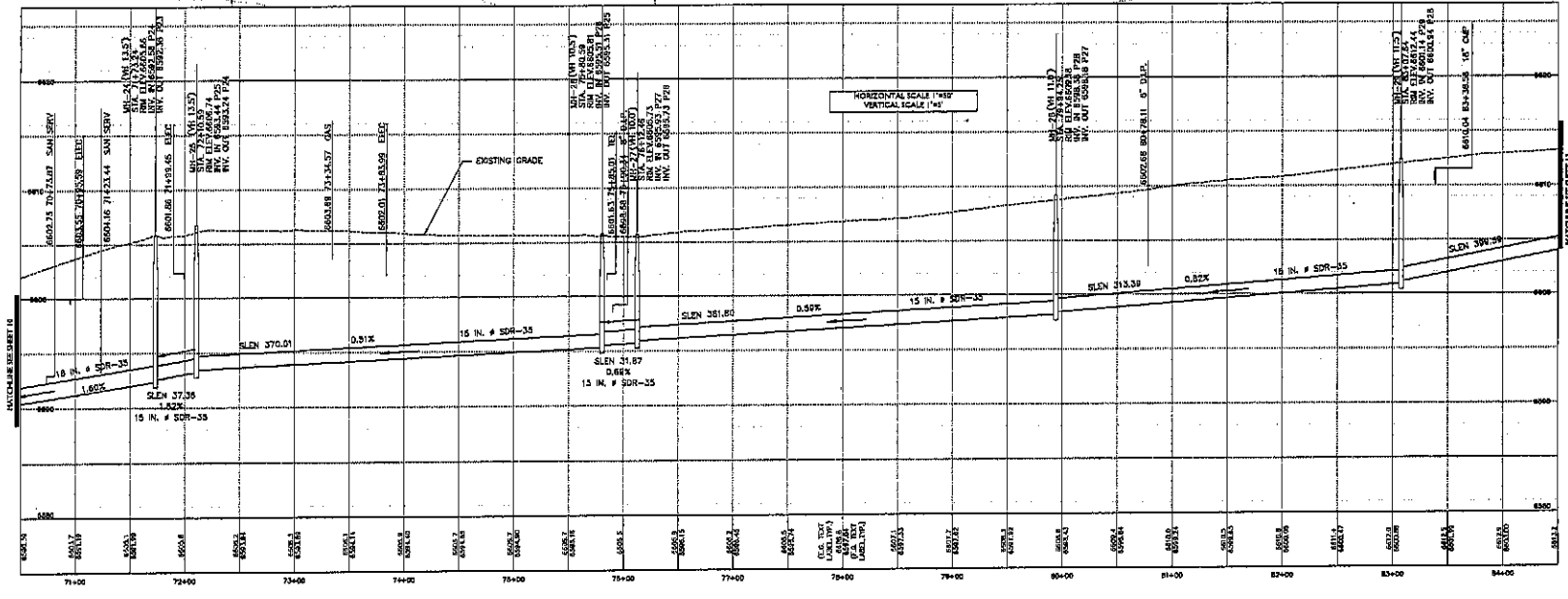


KEY MAP



NOTES:

1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUT PER TOWN OF EAGLE
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.



NOTE:
- EXISTING SEWER MANHOLE
- PROPOSED SEWER MANHOLE

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EAGLE, COLORADO 81631
P 970 328 6388
F 970 328 1038
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NO.	DATE	ISSUE
1	10/17/08	PER PUBLIC INPUT MTG
A	12/17/08	SUBMISSION FOR TOE COMMENTS (DATED 12/17/08)

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 70+50 TO 84+50

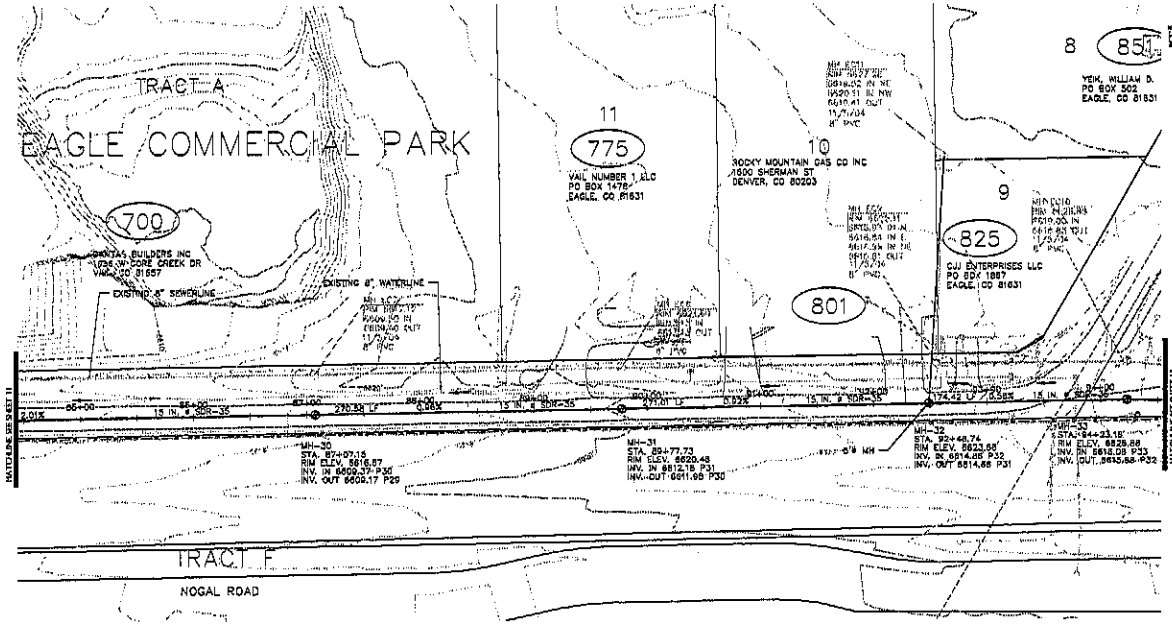
STAMP:

JOB NO. EA06146

SHEET NO. 11

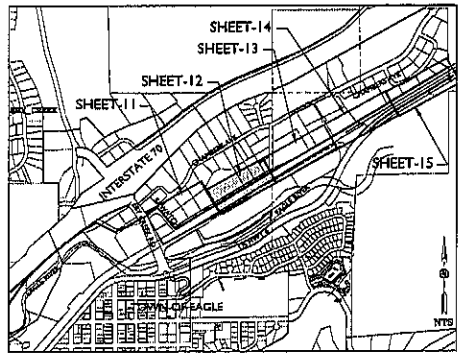
INTEGRITY FROM THE GROUND UP

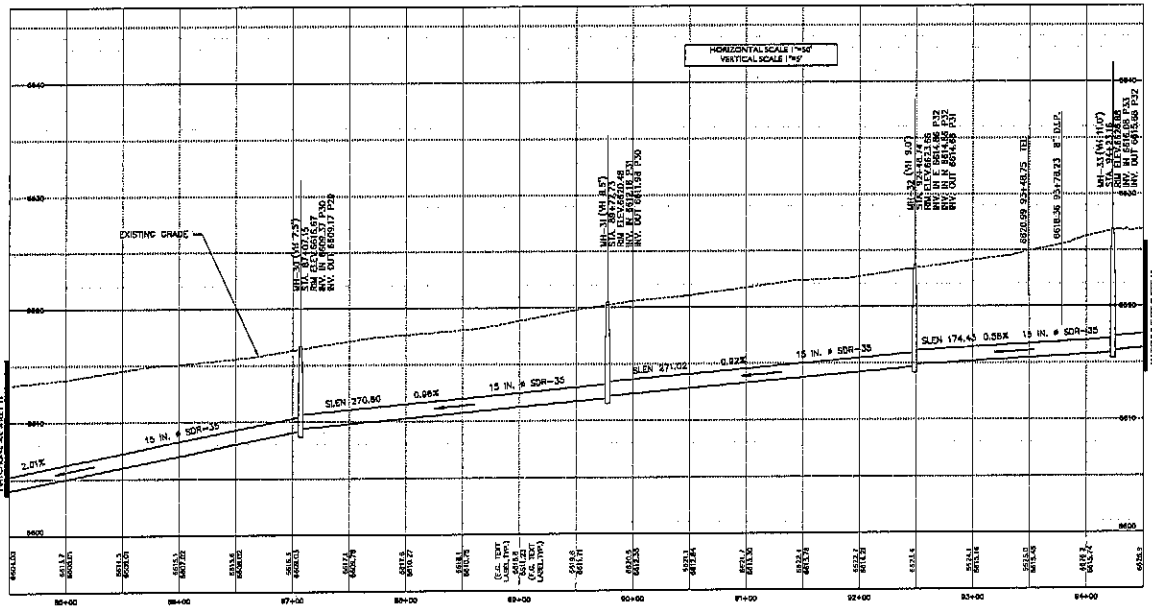
EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 84+50 TO 94+50



GRAPHIC SCALE
0 30 60 120 180
(IN FEET)
1 inch = 30 ft.

KEY MAP





NOTE
EXISTING SEWER MANHOLE
PROPOSED SEWER MANHOLE

NOTES:
1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE.
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.

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EAGLE, COLORADO 81631
P 970.328.6268
F 970.328.9035
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REVISIONS				
			JKA	CW
			JKA	CW
1	8/31/2017	PER PRELIMINARY PLANS	JKA	CW
A	12/20/2017	UPDATED PER TOWN COMMENTS DATED 12/2017	JKA	BT

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 84+50 TO 94+50

STAMP

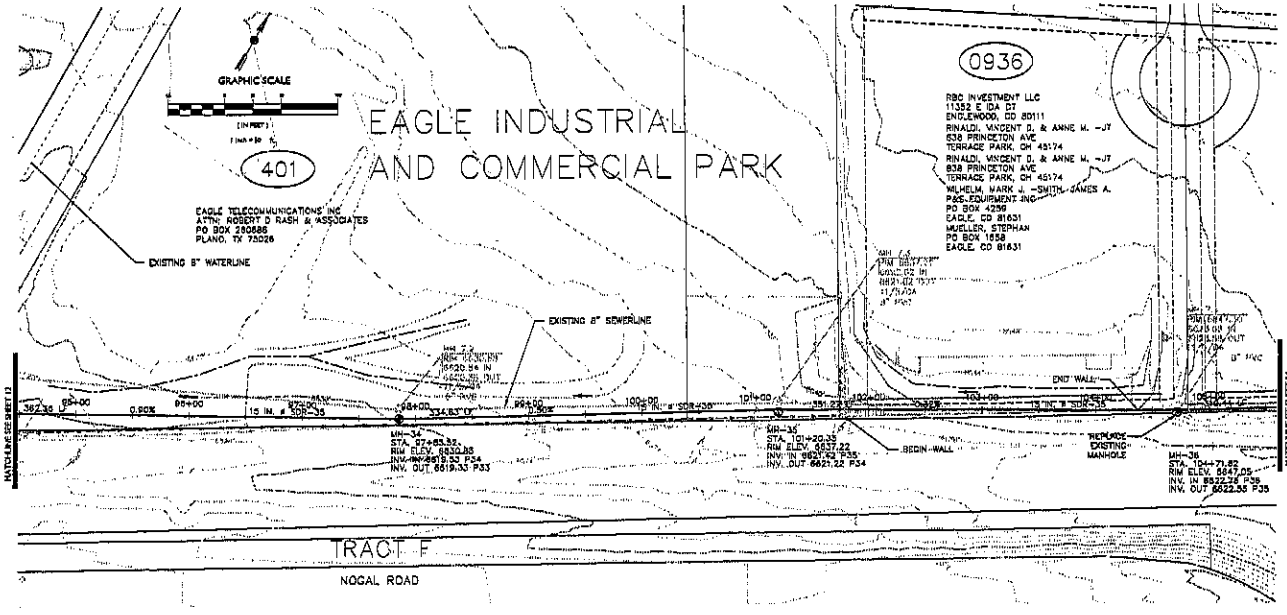
JOB NO. EA06146

SHEET NO. 12

INTEGRITY FROM THE GROUND UP

P:\2016 Projects\EA06146\Engr\Civil\Offsite\Sanitary\Plan\Offsite Sanitary Plan.dwg, 12/7/2017 8:03:29 AM, Adobe PDF, 51

EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 94+50 TO 105+50



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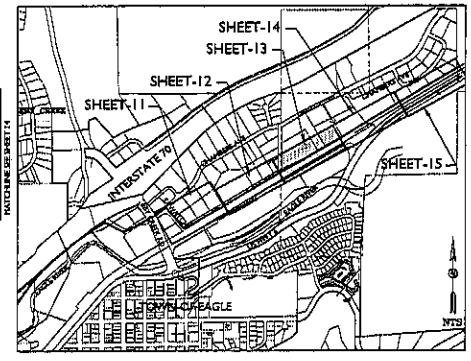

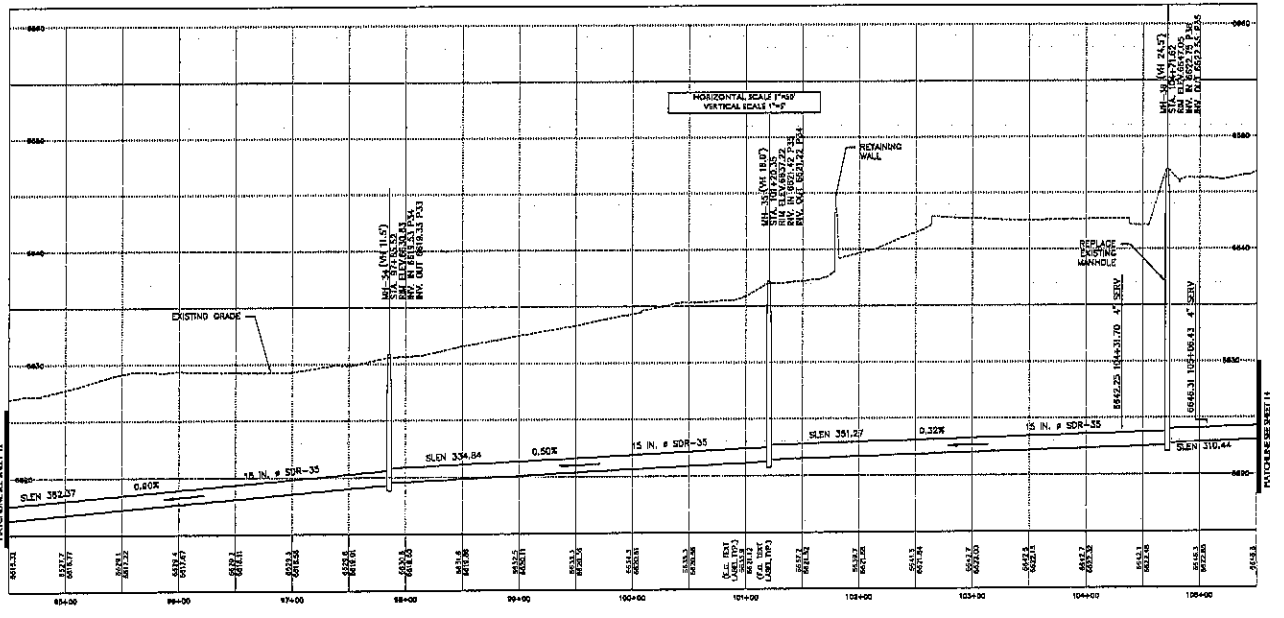

NOTE:
- EXISTING SEWER MANHOLE
- PROPOSED SEWER MANHOLE

NOTES:
1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE
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1286 CHAMBERS AVE., SUITE 200
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P 970 328 6568
F 970 328 1635
WWW.JK-INC.COM

NO	DESCRIPTION	BY	CHK
A	11/09/10 UPDATED PER TOWN COMMENTS DATED 10/07/10	JAK	CW
1	08/12/11 PER PEER REVIEW 7/6/11	JAK	CW
2	12/12/11 PER TOWN COMMENTS	JAK	CW

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 94+50 TO 105+50

STAMP

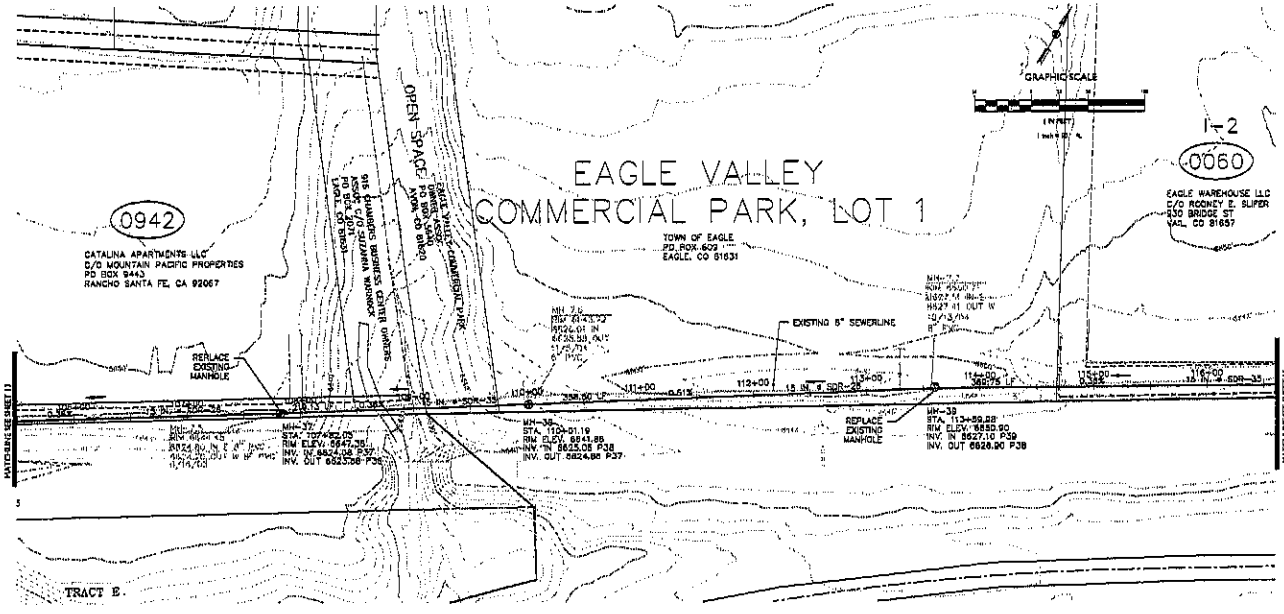
JOB NO. EA06146

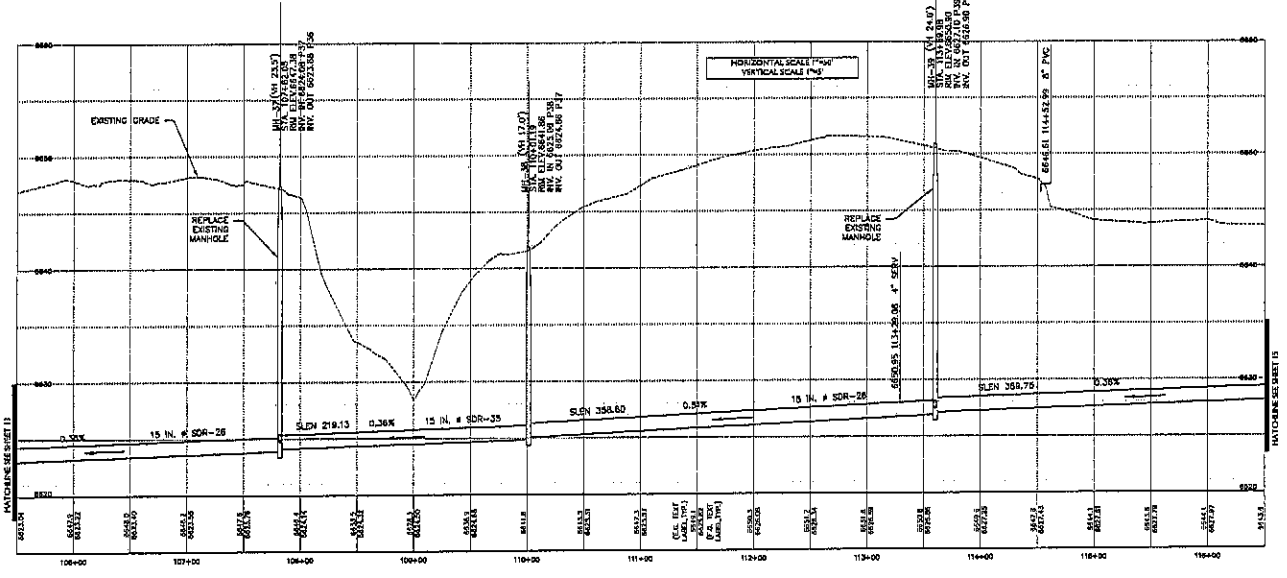
SHEET NO. 13

INTEGRITY FROM THE GROUND UP

P:\2006 Projects\EA06146\dwg\PLAN\Sheet\EA06146sheet Profile.dwg, 12/7/2011 11:44:48 AM, Adobe PDF, 13

EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 105+50 TO 116+50





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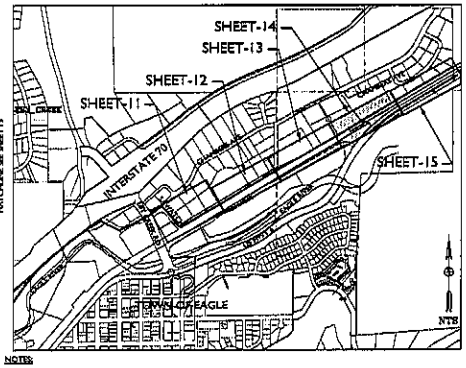

NOTES:

1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE
2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.

NOTE:

- EXISTING SEWER MANHOLE
- PROPOSED SEWER MANHOLE

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POST OFFICE BOX 409
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EAGLE, COLORADO 81631
T 970.328.6348
F 970.328.1825
WWW.JKINC.COM

NO.	DATE	DESCRIPTION	BY	CHK
1	11/20/07	UPDATED PER TOE COMMENTS DATED 11/07/07	JAA	CW
				BT

REVISIONS

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 105+50 TO 116+50

STAMP

JOB NO. EA06146

SHEET NO. 14

INTEGRITY FROM THE GROUND UP

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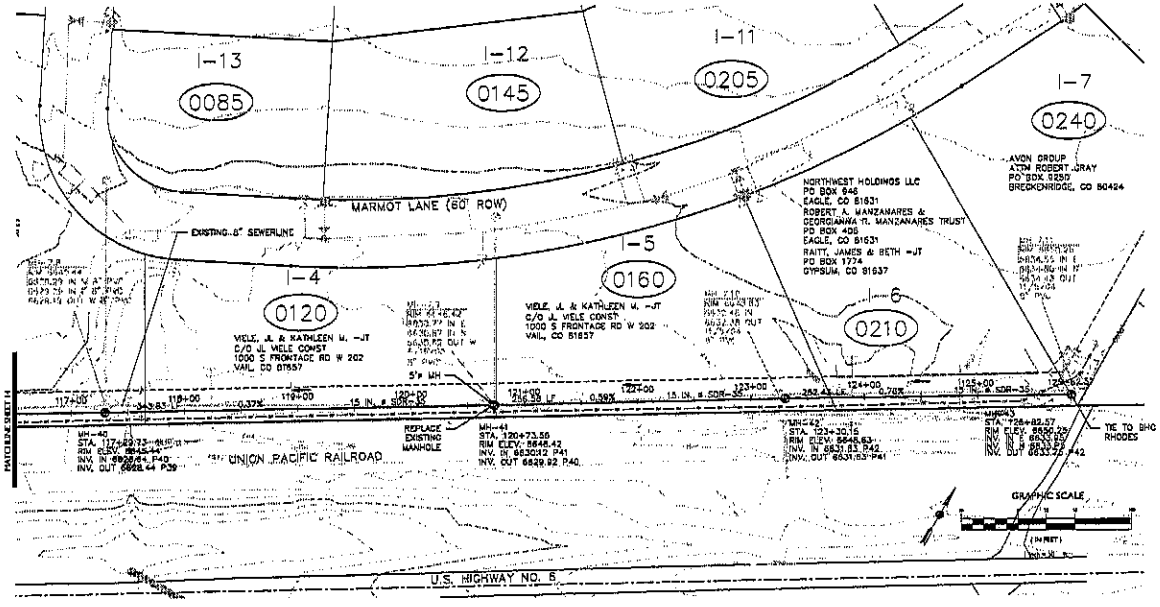
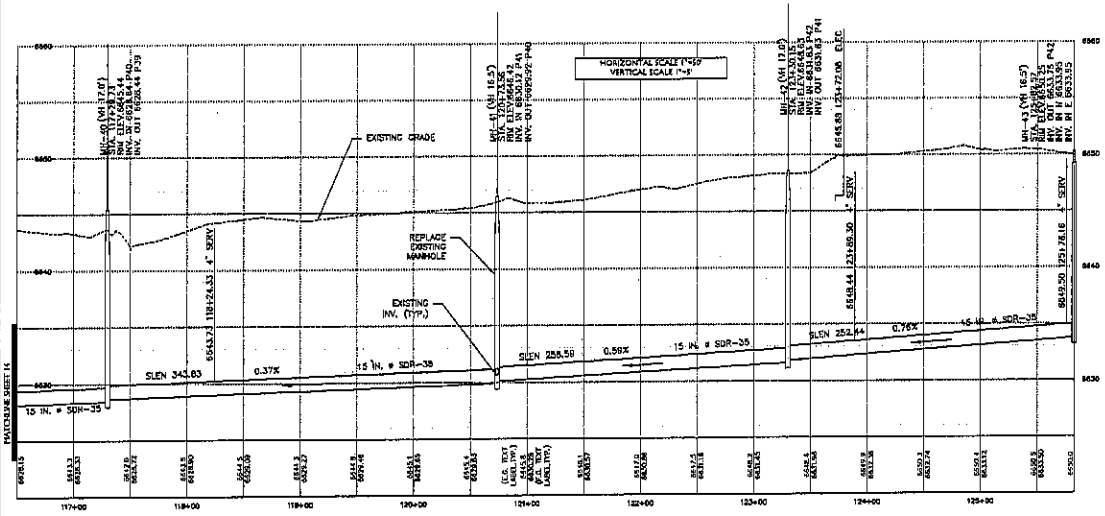
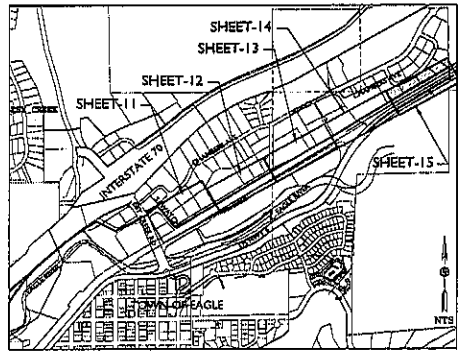
EAGLE RIVER STATION
OFFSITE DESIGN
PROPOSED SANITARY SEWER LINE
STA: 116+50 TO 125+82.57





KEY MAP



NOTE:

*: EXISTING SEWER MANHOLE

Ⓢ PROPOSED SEWER MANHOLE

NOTES:

1. EXISTING SEWER SERVICES SHALL BE LOCATED, VERIFIED AND RE-CONNECTED AT TIME OF CONSTRUCTION. CONTRACTOR SHALL INSTALL SERVICES AND CLEANOUTS PER TOWN OF EAGLE

2. CALL FOR UTILITY LOCATES PRIOR TO CONSTRUCTION.

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1286 CHAMBERS AVE., SUITE 200
EAGLE, COLORADO 81631
P 970 328 6268
F 970 328 1035
WWW.JK-INC.COM

REVISIONS				
A	11/15/07	UPDATED PER TOE COMMENTS DATED 11/7/07	JAA	CW
1	10/15/07	75% PRELIMINARY PLANS	JAA	CW
NO.	DATE	DESCRIPTION	BY	CHK

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: PROPOSED SANITARY SEWER LINE STATION 116+50 TO 125+82.57

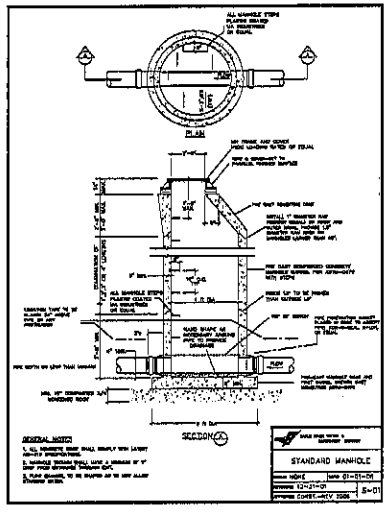
STAMP

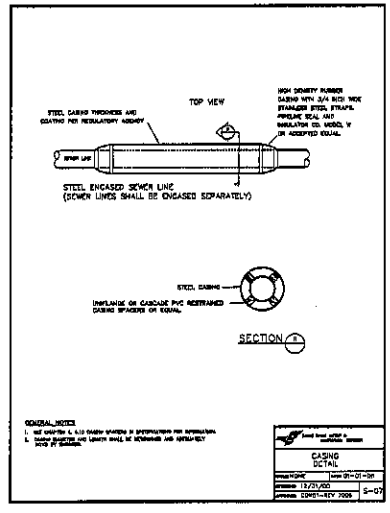
JOB NO. EA06146

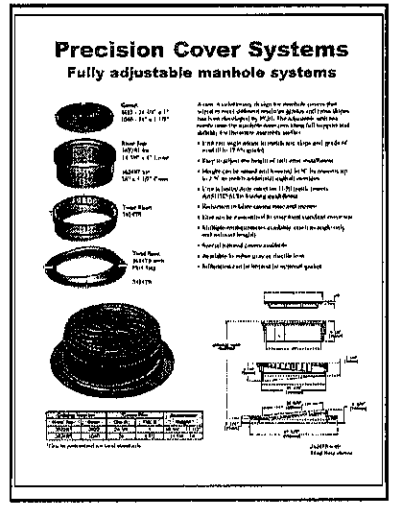
SHEET NO. 15

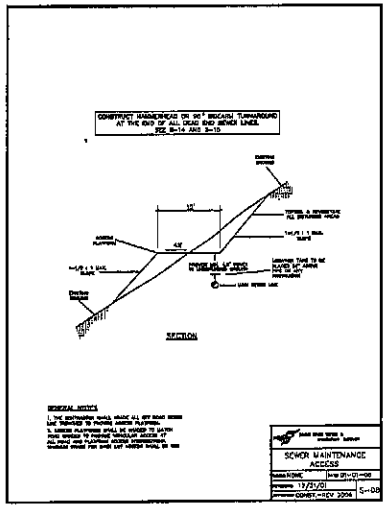
INTEGRITY FROM THE GROUND UP

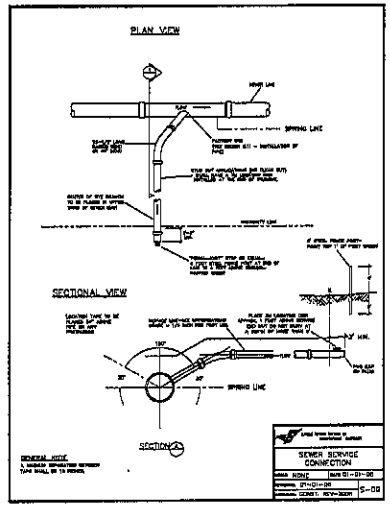
EAGLE RIVER STATION
SEWER CONSTRUCTION DETAILS

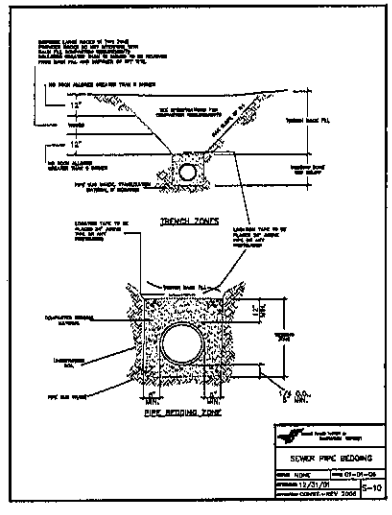












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LAND SURVEYING
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STRUCTURAL ENGINEERING

POST OFFICE BOX 401
0386 CHAMBERS AVE., SUITE 200
EAGLE, COLORADO 81631
P 970 328 6348
F 970 328 1635
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NO.	DATE	DESCRIPTION	BY	CHK
1	10.9.07	ISSUED FOR CONSTRUCTION DRAWINGS	ASD	ST
2	12.4.07	ISSUED FOR REVIEW	ASD	ST

Project: EAGLE RIVER STATION - OFFSITE DESIGN

Title: SEWER CONSTRUCTION DETAILS

JOB NO. EA07183

SHEET NO. 16

INTEGRITY FROM THE GROUND UP

P:\EAGLE Projects\Eagle River Station\Engineering\CAD\PLOTS\SEWER DETAILS.dwg, 12/3/2007 1:48:56 PM, Adobe PDF

EAGLE RIVER STATION
SEWER CONSTRUCTION DETAILS

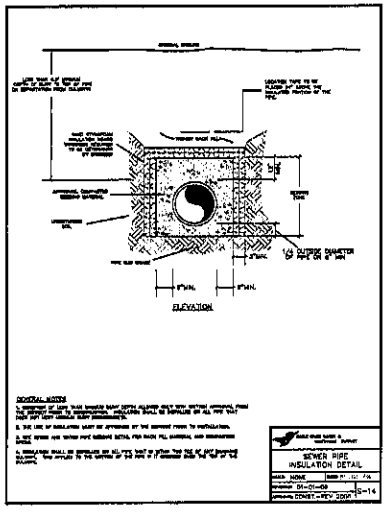
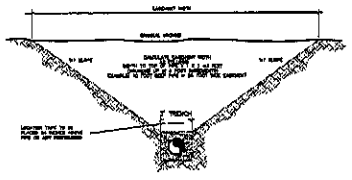
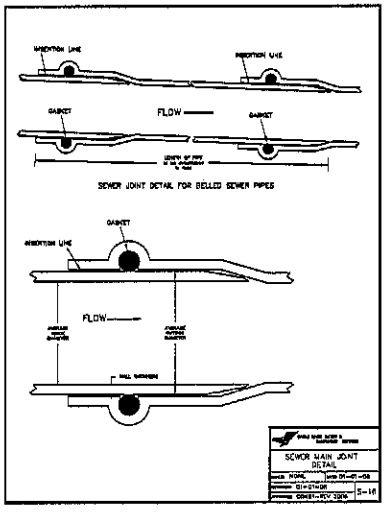


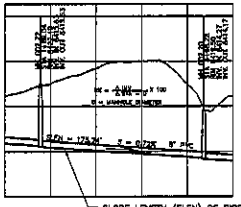
TABLE 3-1

SEWER PIPE COVER DEPTH	MINIMUM EASEMENT WIDTH REQUIRED
4'6" TO 9'6"	20'
9'7" TO 11'0"	25'
11'1" TO 12'6"	30'
12'7" TO 14'0"	35'
14'1" TO 15'5"	40'
14'6" TO 21'0"	45'
21'1" TO 23'6"	50'

PIPE SHALL BE CENTERED IN EASEMENT







TYPICAL SEWER PROFILE DETAIL
N.T.S.

SEWER SYSTEM NOTES:

1) ALL SEWER LINES AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH EAGLE RIVER WATER AND SANITATION DISTRICT SPECIFICATIONS FOR SEWER MAINS, DATED JANUARY 2008 OR LATEST EDITION WITH THE EXCEPTIONS TAKEN IN TOWN OF EAGLE WATER SPECIFICATIONS, DATED SEPTEMBER 18, 2006.

2) SEWER PIPE: 4"–12", ASTM D3034, TYPE PSM SDR 35.

3) SEWER PIPE: 15"–27", ASTM F679, WALL THICKNESS T-1.

4) SEWER PIPE: PROVIDE 12, 14 FOOT LENGTHS.

5) JOINTS: ASTM D3212, PUSH-ON.

6) PERFORM EXFILTRATION OR AIR TEST FOR EACH SECTION OF PIPE IN ACCORDANCE WITH CORROSION RESISTANT COATING.

7) MANHOLES: PRECAST CONCRETE ASTM C478, TYPE II CEMENT.

8) PIPE TO MANHOLE BOOT: FLEXIBLE RUBBER BOOT MEETING OR EXCEEDING ASTM C923, SUCH AS KOR-N-SEAL BY NPC, INC., Z-LOK BY A-LOK PRODUCTS, INC., OR APPROVED EQUAL.

9) MANHOLE STEPS: FED. SPEC. GG-A-200/A, ALUMINUM WITH CORROSION RESISTANT COATING.

10) MINIMUM HORIZONTAL SEPARATION OF 10 FEET AND VERTICAL SEPARATION OF 18 INCHES IS TO BE MAINTAINED BETWEEN SEWER AND WATER LINES.

11) WHERE SEPARATION OF SEWER AND WATER LINES IS LESS THAN THE MINIMUM, SLEEVE SEWER LINE WITH OVERSIZED CONTINUOUS IMPERVIOUS PIPE SLEEVE. SLEEVE IS TO CONTAIN THE SEWER LINE AT ALL POINTS WITHIN TWO PARALLEL LINES 10 FEET ON EITHER SIDE OF THE WATER LINE. ENCASE ENDS AND JOINTS OF SLEEVE IN CONCRETE. SLEEVE SEWER MAIN AND SERVICES CROSSING WATER MAIN.

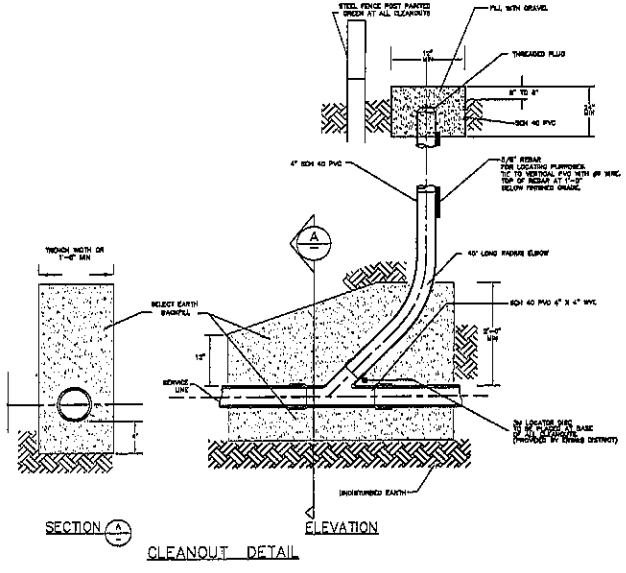
12) AS-BUILT DRAWINGS (BLUELINE AND MYLAR) AND AUTOCAD DRAWING FILE TO BE FURNISHED PRIOR TO ACCEPTANCE BY THE TOWN.

13) SET MANHOLE RIMS MINUS ¼" TO 1" BELOW FINISH ROAD ELEVATION. USE SHIMS TO SET WITH SLOPE AND GRADE OF PAVEMENT.

14) CLEANOUTS ARE TO BE INSTALLED EVERY 100' IN SERVICE LINES OR AT EVERY CHANGE IN DIRECTION.

15) GRADE ALL MANHOLE RIMS 2–3" ABOVE EXISTING GROUND UNLESS NOTED OTHERWISE.

16) EXISTING SEWER SERVICES NEED TO BE RECONNECTED AT TIME OF CONSTRUCTION.



CLEANOUT DETAIL

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CIVIL ENGINEERING
LAND SURVEYING
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STRUCTURAL ENGINEERING

POST OFFICE BOX 409
1246 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970.328.6268
F 970.328.1939
WWW.JKANC.COM

NO.	DATE	REVISIONS	ISSUE
1	10.6.07	UPDATED PER TOE COMMENTS DATED 9.14.07	JAK
A	11.9.07	ISSUED FOR REVIEW	JKD
			KT

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: SEWER CONSTRUCTION DETAILS

STAMP

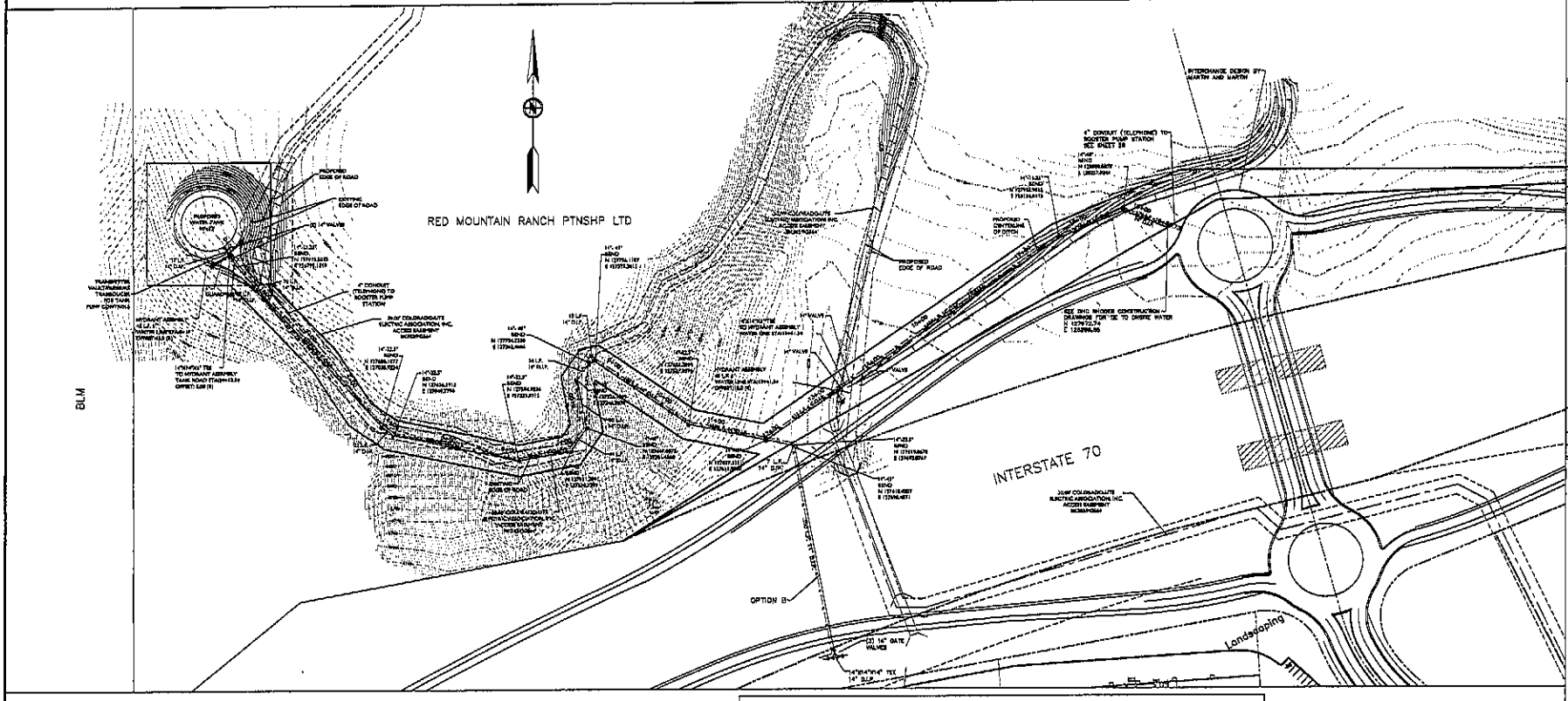
JOB NO. EA07183

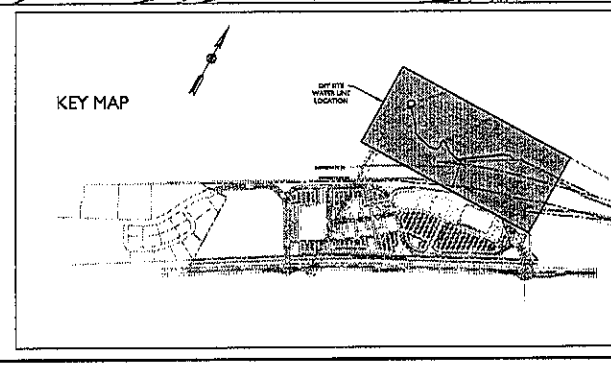
SHEET NO. 17

INTEGRITY FROM THE GROUND UP

P:\2007\Projects\EA07183\Civil\Drawings\Offsite\Sewer Details\EA07183SewerDetails.dwg, 11/6/2007 8:18:03 PM, KATIE RITZ

EAGLE RIVER STATION
OFFSITE DESIGN
OVERALL TANK WATER LINE PLAN





GRAPHIC SCALE

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ARCHITECTURE
CIVIL ENGINEERING
LAND SURVEYING
MAPPING
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STRUCTURAL ENGINEERING
POST OFFICE BOX 409
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6388
F 970 328 1035
WWW.JKINC.COM

REVISION				
	1	15-3-07	ISSUED FOR REVIEW	
	NO.	DATE	DESCRIPTION	

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: OVERALL TANK WATER LINE PLAN

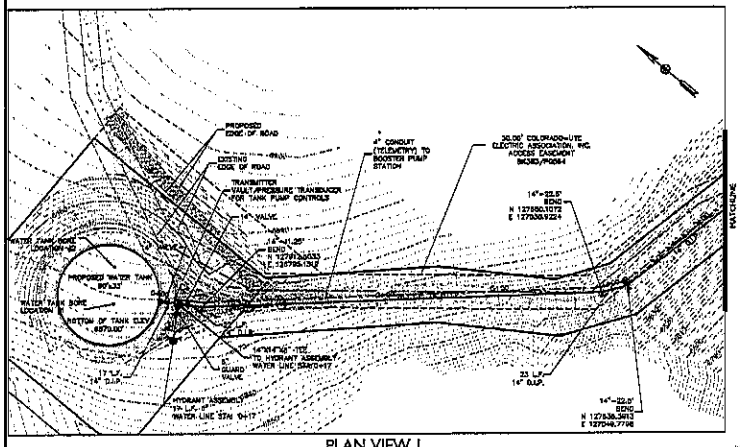
STAMP

JOB NO. EA07183

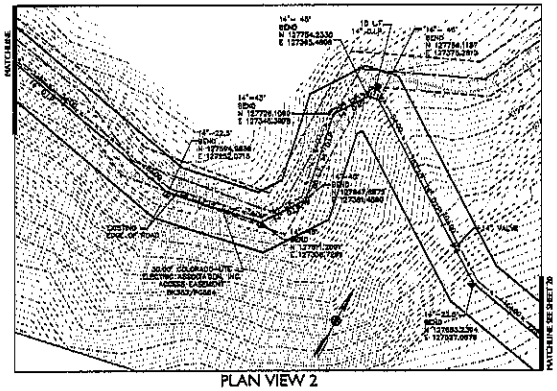
SHEET NO. 18

INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
14" WATER LINE TANK PLAN & PROFILE
STA: 0+00 TO 11+00

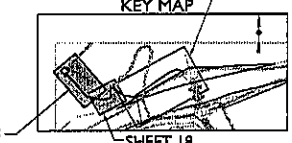


PLAN VIEW 1
STA: 0+00 TO 5+00



PLAN VIEW 2
STA: 5+00 TO 11+00

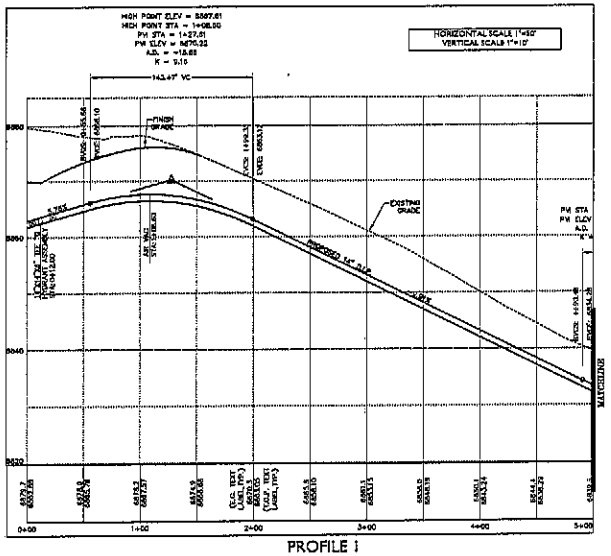
KEY MAP



SHEET 19

SHEET 18
PLAN VIEW 1

SHEET 18
PLAN VIEW 2



PROFILE 1
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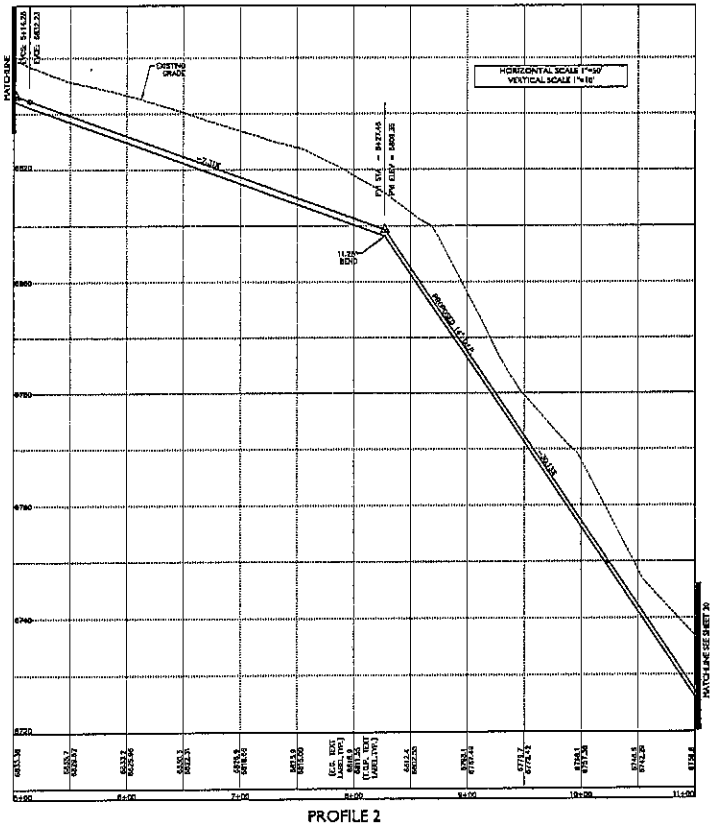

PROFILE 2
STA: 5+00 TO 11+00

GRAPHIC SCALE

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POST OFFICE BOX 409
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 8358
F 970 328 1635
WWW.JK-INC.COM

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK
1	10/24/07	UPDATED PER TOE COMMENTS DATED 10-17-07		
0	10/3/07	ISSUED FOR REVIEW		

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: TANK WATER LINE PLAN AND PROFILE
STA: 0+00 TO 11+00

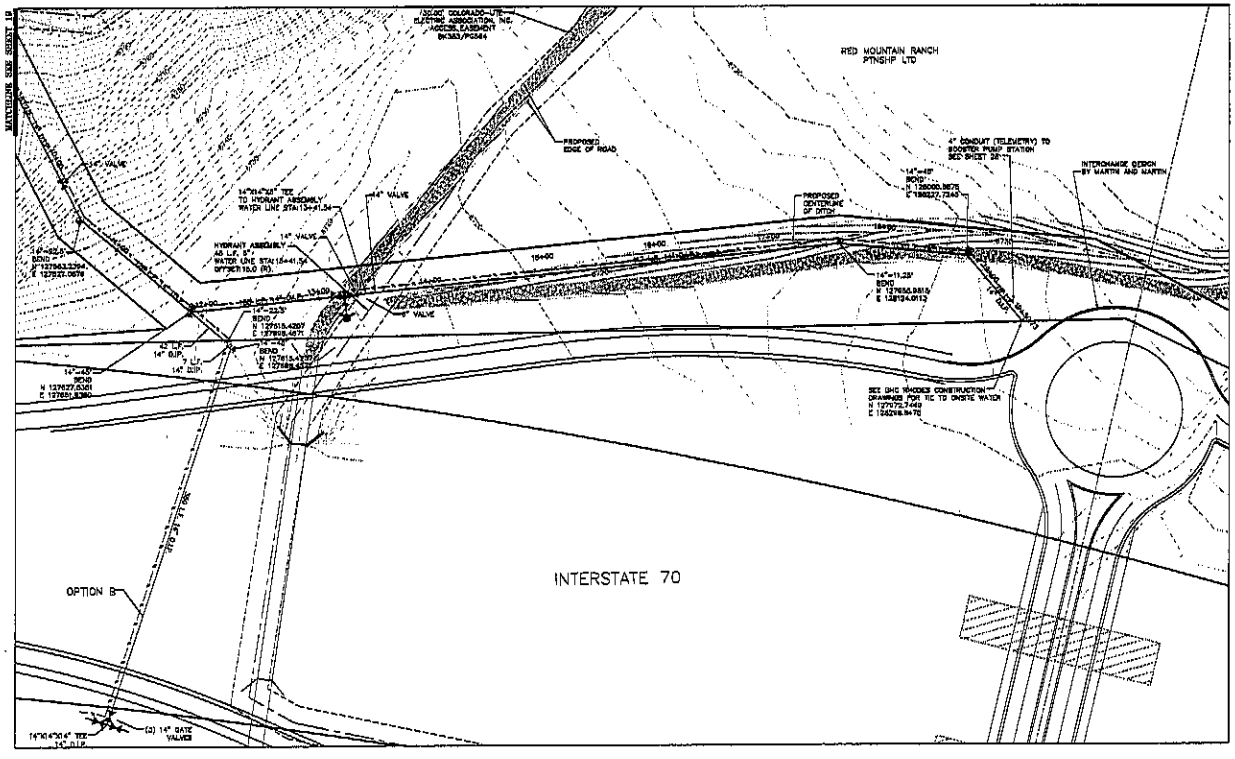
STAMP

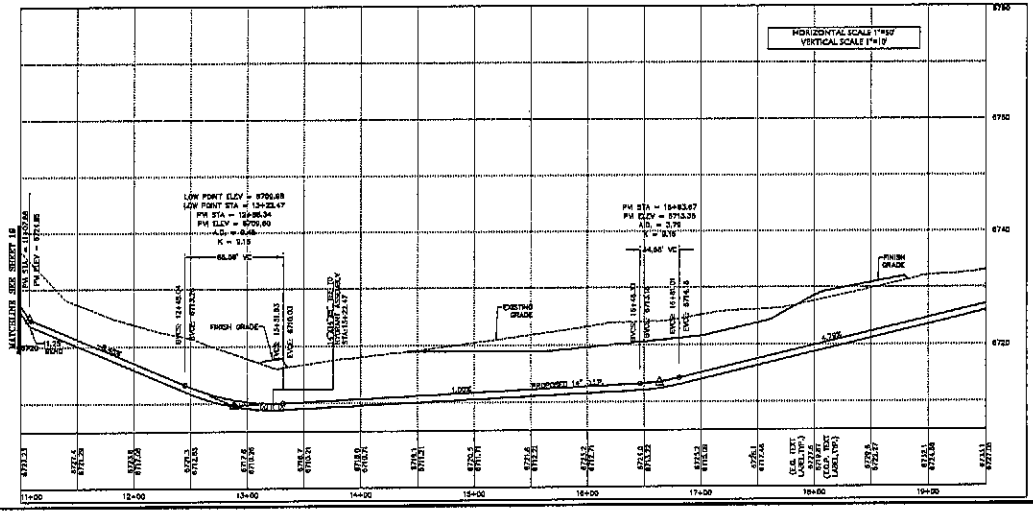
JOB NO. EA07183

SHEET NO. 19

INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
TANK WATER LINE PLAN & PROFILE
STA: 11+00 TO 19+50.73





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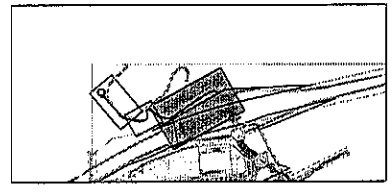

GRAPHIC SCALE

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POST OFFICE BOX 499
1386 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6565
F 970 328 1005
WWW.JKINC.COM

NO.	DATE	REVISIONS	BY	CHK
1	10/14/07	ISSUED FOR REVIEW	ASD	DMC
A	11/26/07	UPDATED PER TCE COMMENTS DATED 11/19/07	ASD	BT

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: TANK WATER LINE PLAN AND PROFILE STA: 11+00 TO 19+50.73

STAMP

JOB NO. EA07183

SHEET NO. 20

INTEGRITY FROM THE GROUND UP

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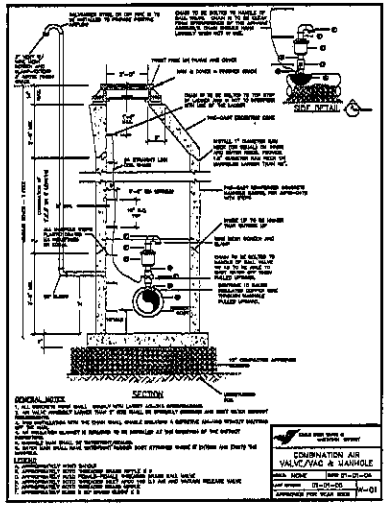
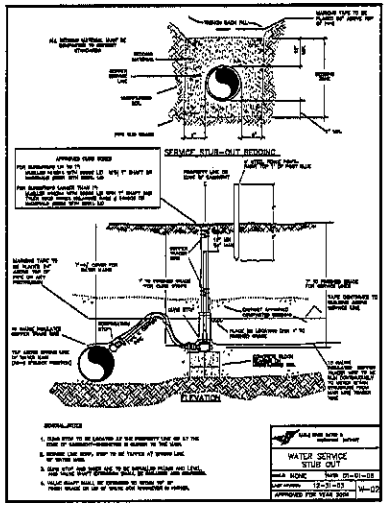
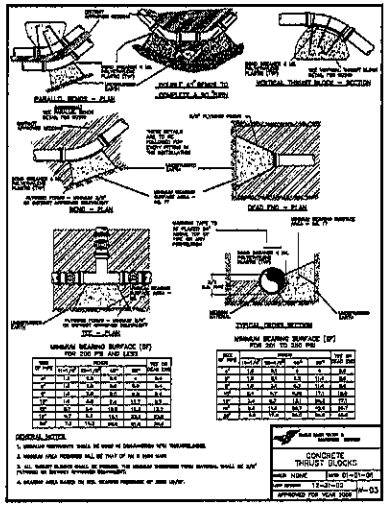
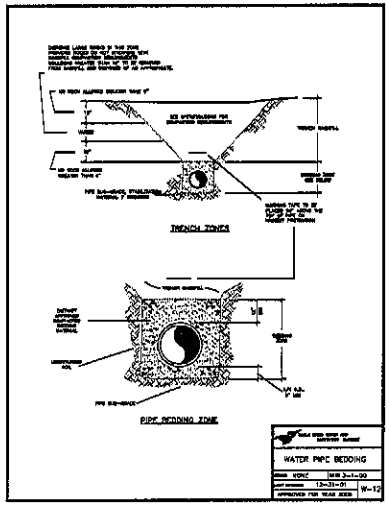
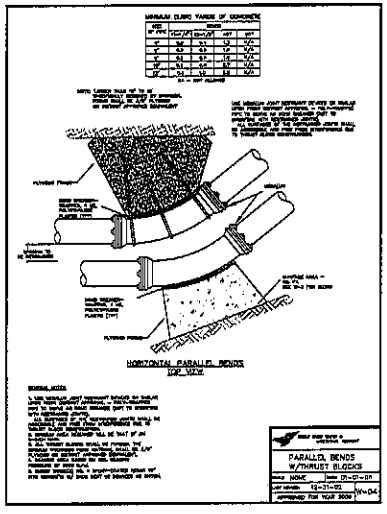
EAGLE RIVER STATION
WATER CONSTRUCTION DETAILS

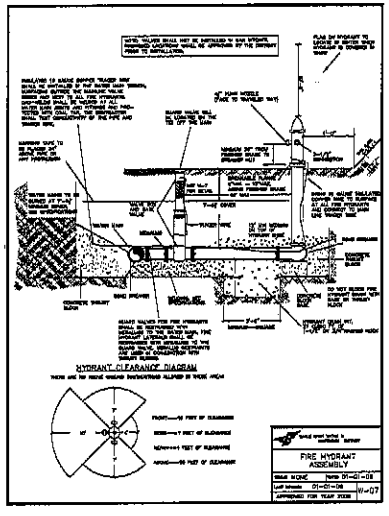


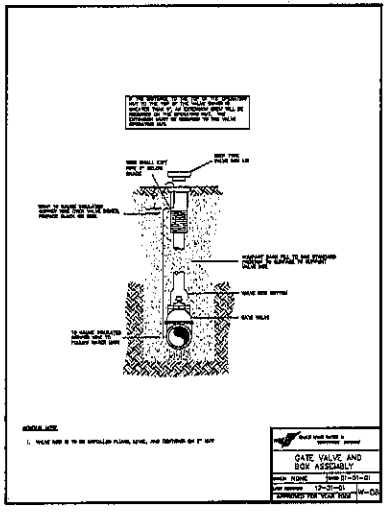


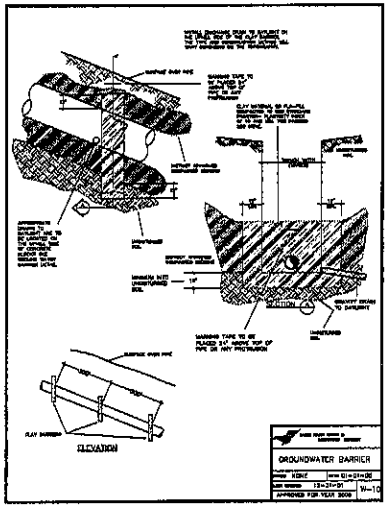












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STRUCTURAL ENGINEERING
POST OFFICE BOX 409
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6368
F 970 328 1035
WWW.JK-INC.COM

REVISIONS				
A	11-26-02	UPDATED FOR ALL DIVISIONS DATED 11-14-02		
1	12-4-02	ISSUED FOR REVIEW		
NO.	DATE	DESCRIPTION		

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: WATER CONSTRUCTION DETAILS

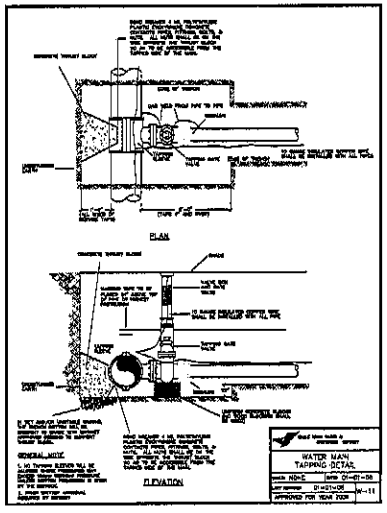
STAMP

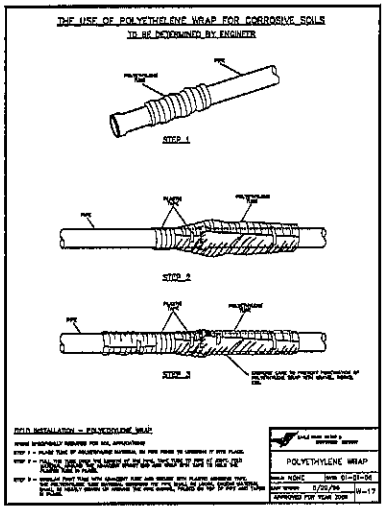
JOB NO. EA07183

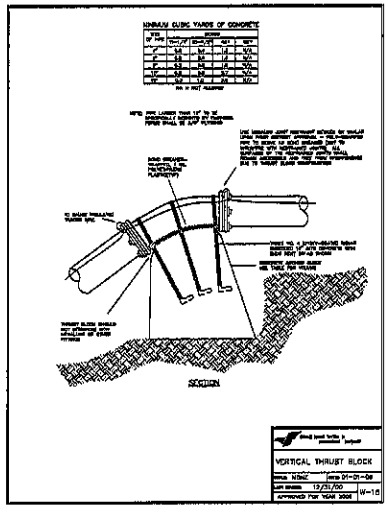
SHEET NO. 21

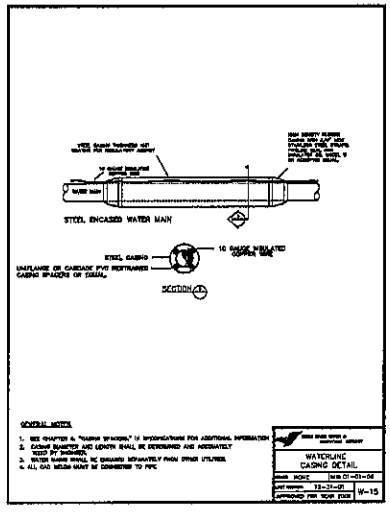
INTEGRITY FROM THE GROUND UP

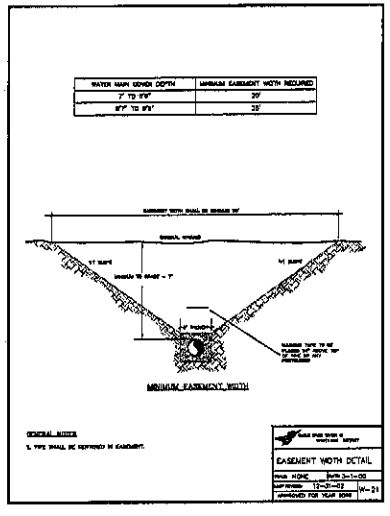
EAGLE RIVER STATION
WATER CONSTRUCTION DETAILS

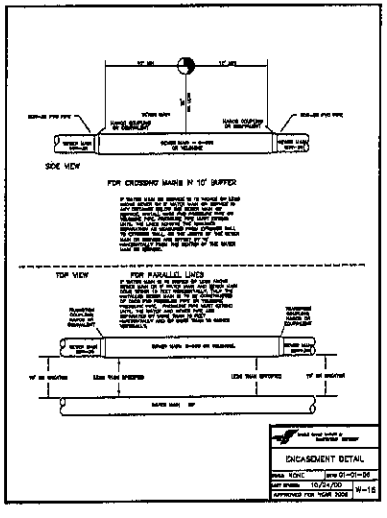


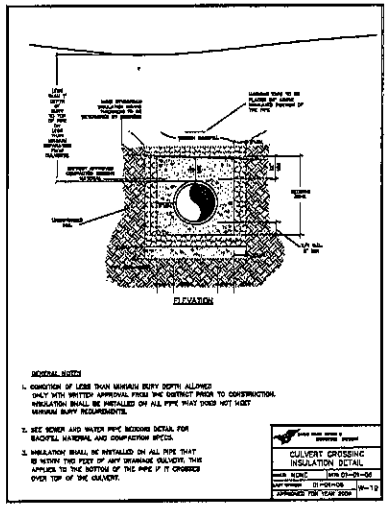


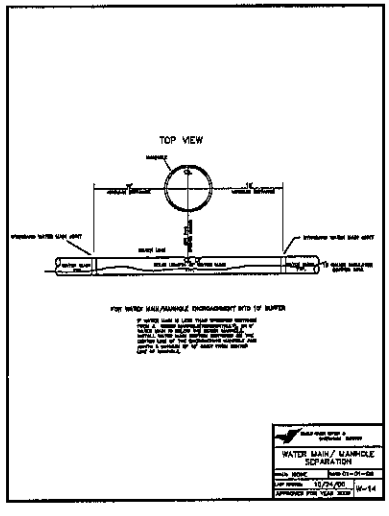












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ARCHITECTURE
CIVIL ENGINEERING
LAND SURVEYING
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PLANNING
STRUCTURAL ENGINEERING

POST OFFICE BOX 409
1384 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6368
F 970 328 1035
WWW.JK-INC.COM

NO.	DATE	DESCRIPTION	ADD	BY	CHK
1	11-24-02	UPDATED PER TOR COMMENTS DATED 11-17-02			
A	11-24-02	ISSUED FOR REVIEW			

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: WATER CONSTRUCTION DETAILS

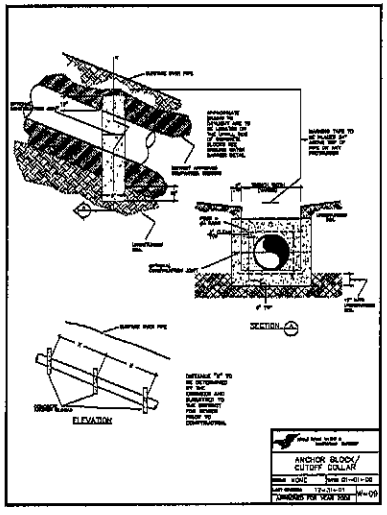
STAMP

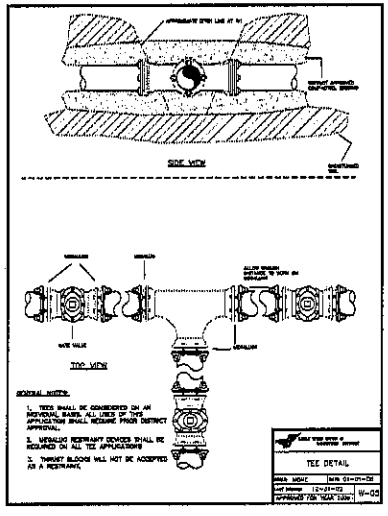
JOB NO. EA07183

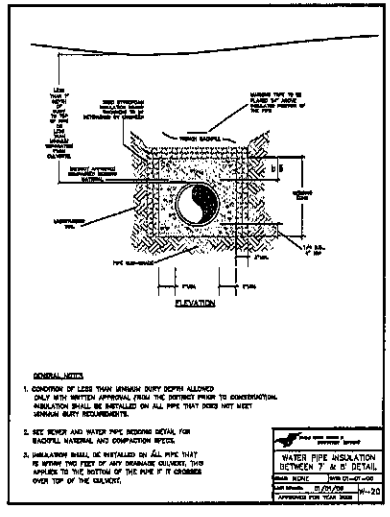
SHEET NO. 22

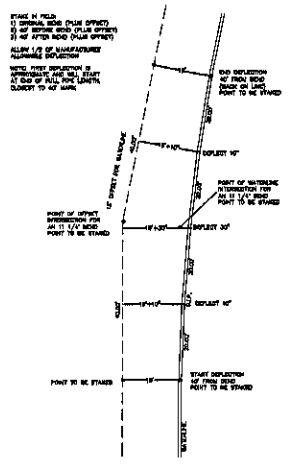
INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
WATER CONSTRUCTION DETAILS









WATER LINE DEFLECTION DETAIL
N.T.S.

WATER SYSTEM NOTES:

1) ALL WATER LINES AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH EAGLE RIVER WATER AND SANITATION DISTRICT STANDARD SPECIFICATIONS FOR WATER MAINS, DATED JANUARY 2008 WITH THE EXCEPTIONS TAKEN IN TOWN OF EAGLE WATER SPECIFICATIONS, DATED SEPTEMBER 19, 2008.

2) MINIMUM OF 6 FEET OF COVER (MAXIMUM 9 FEET) WILL BE MAINTAINED OVER WATER LINES (COVER NEEDS TO BE APPROVED BY THE TOWN OF EAGLE PUBLIC WORKS DEPARTMENT).

3) DUCTILE IRON PIPE SHALL BE CLASS 52 WITH A LAYING LENGTH OF 20 FEET.

4) DUCTILE IRON PIPE SHALL CONFORM TO ANSI/AWWA C151/A21.51.

5) DUCTILE IRON PIPE JOINTS SHALL BE TYTON TYPE.

6) ALL TEES, CROSSES, AND ELBOWS SHALL HAVE MECHANICAL JOINTS.

7) PIPE FITTINGS FOR CONSTRUCTION OF VALVES IN THE MAIN SHALL BE MECHANICAL JOINTS CONFORMING TO ANSI/AWWA/C 110/A21.10 DESIGNED FOR 350 PSI.

8) ALL BENDS EITHER HORIZONTAL OR VERTICAL, SHALL HAVE A FLEXIBLE TYPE JOINT COMMON TO THE TYPE OF PIPE OR PIPE JOINTS BEING USED.

9) CONDUCTIVE STRAPS ARE REQUIRED AT ALL JOINTS.

10) MINIMUM HORIZONTAL SEPARATION OF 10 FEET OR VERTICAL SEPARATION OF 18 INCHES IS TO BE MAINTAINED BETWEEN SEWER MAINS, WATER MAINS, SEWER SERVICE LINES, AND WATER SERVICE LINES.

11) WATER LINE WILL BE TRACED WITH 10 GAUGE INSULATED COPPER WIRE, ACCESSIBLE AT ALL VALVE BOXES.

12) 3M LOCATOR DISC (PROVIDED BY THE TOWN) SHALL BE PLACED AT BASE OF ALL CURB STOP VALVES AND GATE VALVES.

13) ALL PIPE SHALL BE SUBJECTED TO PRESSURE LEAKAGE TESTS WITNESSED BY THE ENGINEER.

14) AS-BUILT DRAWINGS (BLUE LINE AND MYLAR) AND AUTOCAD DISK TO BE FURNISHED PRIOR TO ACCEPTANCE BY THE TOWN.

15) ALL CURB STOPS SHALL BE MARKED WITH A STEEL FENCE POST AT PROPERTY LINES.

16) GATE VALVES SHALL BE RESILIENT SEAT GATE VALVES, HAVE NONRISING STEMS AND OPEN COUNTER CLOCKWISE.

17) FIRE HYDRANT DRAINAGE PIT SHALL BE BACKFILLED WITH 1/3 CUBIC YARDS OF 1 1/2" WASHED ROCK.

18) CONCRETE THRUST BLOCK SHALL OBTAIN 3000 PSI – 28 DAY STRENGTH.

19) PROVIDE CUTOFF COLLARS ON WATER LINES WITH SLOPES GREATER THAN 15%.

20) DUCTILE IRON PIPE SHALL BE CLASS 52, EXCEPT AT EAGLE RIVER CROSSING WHICH WILL BE CLASS 54.

21) CONCRETE THRUST BLOCKS SHALL NOT EXTEND BEYOND FITTING BELLS.

22) CONCRETE THRUST BLOCKS SHALL OBTAIN 3000 PSI– 28 DAY STRENGTH.

23) CONTRACTOR IS RESPONSIBLE TO SUBMIT THRUST BLOCK CALCULATIONS PRIOR TO CONSTU

TOWN OF EAGLE ENGINEER'S NOTES FOR WATER CONSTRUCTION PLANS

1) WHERE AIR VALVE VAULTS ARE REQUIRED VENT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE OWNER/ENGINEER.

2) THE CONTRACTOR SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO SIGNIFICANTLY REDUCE ANY POTENTIAL POLLUTION CAUSED BY HIS ACTIVITIES, INCLUDING VEHICLE FUELING, STORAGE OF FERTILIZERS OR CHEMICALS, ETC. THE CONTRACTOR SHALL HAVE IDENTIFIED PROCEDURES FOR HANDLING POTENTIAL POLLUTANTS AND HAVE IDENTIFIED SPILL PREVENTION AND RESPONSE PROCEDURES PRIOR TO ANY ACTIVITIES AT THE PROJECT SITE.

3) THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES TO THE SATISFACTION OF THE TOWN OF EAGLE.

4) SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE TOWN IS NOT RESPONSIBLE FOR SAFETY IN, ON OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PART WITH ANY REGULATIONS RELATING HERETO.

5) THE CONTRACTOR IS WARNED THAT CONFLICTS WITH EXISITING UTILITY SERVICES MY EXSIST. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE COMPANIES FOR LINE LOCATIONS. THE CONTRACTOR SHALL THEN LOCATE ALL UTILITIES (INCLUDING DEPTH). ANY CONFLICTS WITH THE PROPOSED CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER SO THAT LINE OR GRADE CHANGES CAN BE MADE TO ELIMINATE ANY CONFLICTS WITH THESE EXISISTING UTILITIES. ALL EXSISTING UTILITIES SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR.

6)ALL CONSTRUCTION SHALL CONFORM TO STATE, COUNTY, OR TOWN STANDARDS ADN SPECIFICATIONS AND BE SUBJECT TO CONSTRUCTION OBSERVATION BY THEIR REPRESENTATIVES. COPIES OF STATE, COUNTY AND TOWN STANDARDS MUST BE OBTAINED BY THE CONTRACTOR. CONTRACTOR SHALL HAVE ONE (1) COPY OF THE PLANS AND ONE (1) COPY OF THE APPROPRIATE SPECIFICATIONS ON THE JOB SITE AT ALL TIMES.

7) ALL CONSTRUCTION ACTIVITIES AND EXCAVATING FOR UTILITY TRENCHES SHALL MEET OSHA REQUIREMENTS.

8) IF ANY GROUNDWATER IS ENCOUNTERED THE CONTRACTOR HSALL CONTACT OWNER, ENGINEER AND THE PROJECT GEOTECHNICAL ENGINEER IMMEDIATELY.

9) THE CONTRACTOR SHALL MAINTAIN EXSISTING DRAINAGE CHANNELS, CULVERTS, AND APPURTENANCES DURING CONSTRUCTION AS NECESSARY TO PROTECT ROADS AND PROPERTY.

10) THE CONTRACTOR SHALL PROYECT AND PRESERVE ALL TREES, BUSHES, SHRUBS AND GROUND COVER IN A MANNER ACCEPTABLE TO THE OWNER. COORDINATE ALL TREE REMOVAL WITH OWNER/ENGINEER.

11) OBSERVATIONS OF THE WORK IN PROGRESS AND ON-SITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE OR WARRANTY BU THE ENGINEER OF THE CONTRACTOR'S CONTRACTUAL RESPONSIBILITIES.

12) ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE TOWN AND/OR THEIR REPRESENTATIVES, AND ENGINEER. THE TOWN RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DO NOT CONFORM TO THE APPROVED DRAWINGS AND/OR DISTRICT STANDARDS OR SPECIFICATIONS.

13) COMPACTION OF ALL TRENCHES AND BEDDING MUST BE ATTAINED AS PER SPECIFICATIONS.

14) THE CONTRACTOR SHALL MARK ALL SERVICE LINE ENDS AS SHOWN ON THE DETAILS.

15) THE CONTRACTOR SHALL PROVIDE THRUST BLOCKS AT ALL BENDS AND TEES.

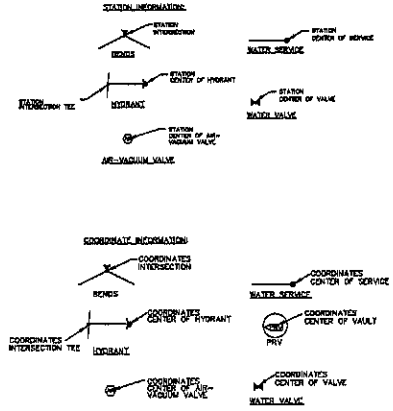
16) THE CONTRACTOR SHALL VORIFY EXSISTING PIPE OR MANHOLE INVERTS AT TIE IN POINTS PRIOR TO CONSTRUCTION.

17) THE CONTRACTOR SHALL LAY 10 GAUGE INSULATE COPPER TRACE WIRE ALONG THE WATER LINES (SEE DETAIL SHEET), AND DUCTILE IRON WATER PIPE SHALL BE CAD-WELDED CHARGE SIZE OF CA-4A. THE CONTRACTOR SHALL TEST THE PIPE AND THE TRACER WIRE TO CONFIRM CONDUCTIVITY PRIOR TO ACCEPTANCE. THE CONTRACTOR SHALL FIELD INSTALL POLYETHYLENE WRAP ON ALL WATER LINES.

18) THE CONTRACTOR SHALL TEST ALL WATER MAINS AND TANKS IN ACCORDANCE WITH TOWN STANDARD SPECIFICATIONS, TEST TO INCLUDE PRESSURE TEST, CHLORINE TEST, BACTERIA TEST, AND LEAKAGE TEST.

19) THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING, CONDUCTING AND SCHEDULING FOR THE TESTING OF ALL UTILITIES.

20) THE CONTRACTOR MAY NEED TO PERFORM HYDRAULIC TESTING AND DISINFECTION OF EXISTING WATERLINES AS PART OF THE TESTING AND ACCEPTANCE PROCEDURE FOR THE PROPOSED WATERLINE.



NOTE:

1) COORDINATES BASED ON TOWN OF EAGLE CONTROL.

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STRUCTURAL ENGINEERING
POST OFFICE BOX 409
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970.328.6348
F 970.328.1853
WWW.JKINC.COM

NO	DATE	DESCRIPTION	BY	CHK
A	11.24.08	REVISED PER TOE COMMENTS DATED 11.14.08	JKC	
1	10.31.08	SUBMITTAL FOR REVIEW	JKC	

REVISIONS / ISSUE

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: WATER CONSTRUCTION DETAILS

STAMP

JOB NO. EA07183

SHEET NO. 23

INTEGRITY FROM THE GROUND UP

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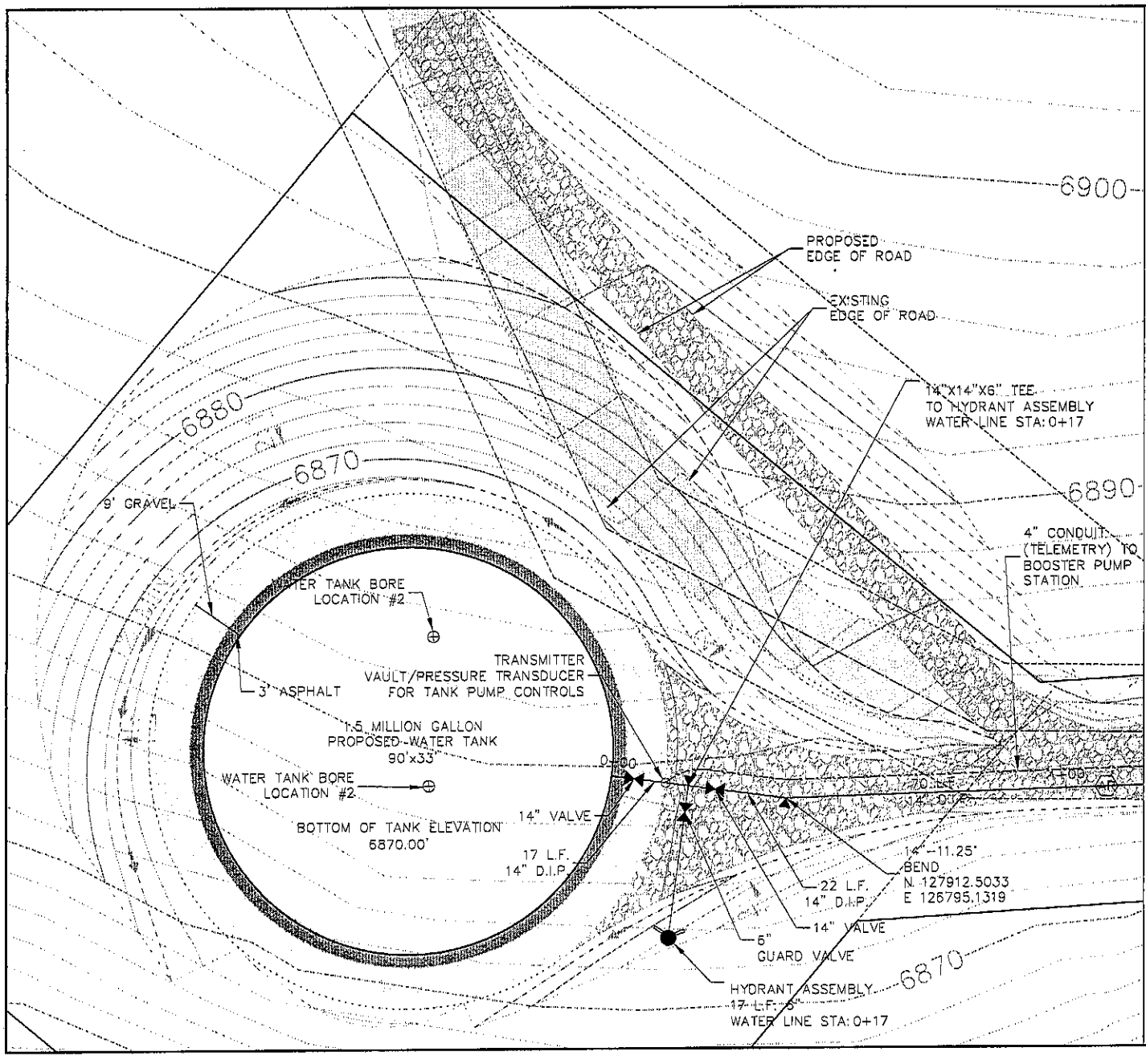
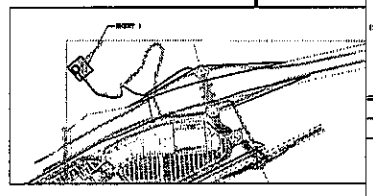


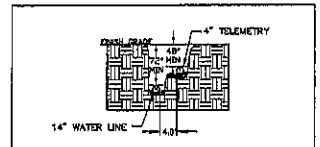
EAGLE RIVER STATION
OFFSITE DESIGN
WATER TANK GRADING PLAN

KEY MAP



NOTE:

1) REFER TO SHEET 24 FOR DETAIL INFORMATION.



TRENCH DETAIL FOR WATER LINE AND TELEMETRY
N.T.S.

GRAPHIC SCALE

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PLANNING
STRUCTURAL ENGINEERING
POST OFFICE BOX 409
1286 CHAMBERS AVE. SUITE 200
EAGLE, COLORADO 81631
P 970 328 6268
F 970 328 6328
WWW.JKINC.COM

REVISIONS				
NO.	DATE	DESCRIPTION	BY	CHK
1	10/24/07	ISSUED FOR REVIEW	AMD	BT
2	11/30/07	ISSUED FOR REVIEW	AMD	BT

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: WATER TANK GRADING PLAN

STAMP

JOB NO. EA07183

SHEET NO. 24

INTEGRITY FROM THE GROUND UP

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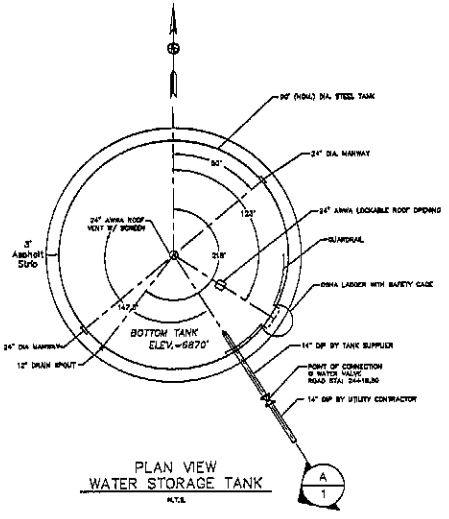
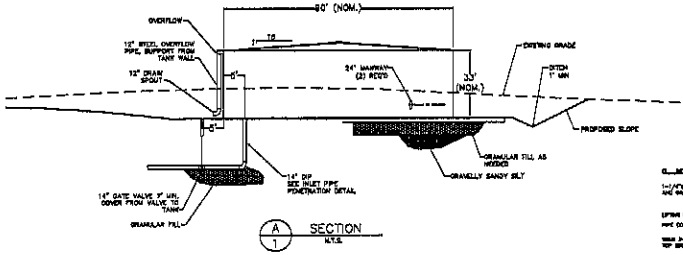
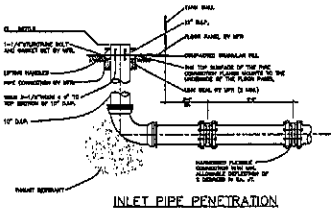
EAGLE RIVER STATION
WATER TANK DETAILS

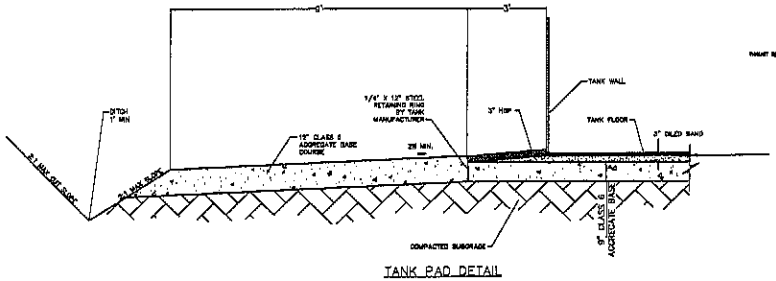


PLAN VIEW
WATER STORAGE TANK
N.T.S.

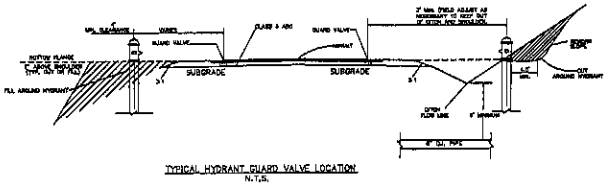




INLET PIPE PENETRATION
NTS



TANK PAD DETAIL
NTS



TYPICAL HYDRANT GUARD VALVE LOCATION
N.T.S.

WATER TANK NOTES:

1) TANK SHALL BE DESIGNED BY TANK MANUFACTURER WITH GENERAL DIMENSIONS AND CONFIGURATION SHOWN. DESIGN AND CONFIGURATION SHOWN, DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH AWWA D103, LATEST EDITION, FOR A CLASS LINED BOLTED STEEL TANK. TANK MANUFACTURER SHALL SUBMIT FOUR (4) COPIES OF THE TANK SHOP DRAWINGS FOR REVIEW AND APPROVAL TO FABRICATION.
2) SAFETY RAILING AND LADDER TO BE CONSTRUCTED IN ACCORDANCE WITH OSHA STANDARDS.
3) ASPHALT AND ROAD BASE SHALL BE INSTALLED IN ACCORDANCE WITH CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
   A) ASPHALT PER AASHTO M 226 AC-10
   B) ROAD BASE: CLASS 6
4) OIL FOR SAND TO BE MC-70 APPLIED AT 0.3 GALLONS PER SQUARE YARD.
5) INSTALL UNDERGROUND DUCTILE IRON PIPE, FITTINGS AND VALVE IN ACCORDANCE WITH TOWN OF EAGLE STANDARDS.
6) ALL UNDERGROUND DUCTILE IRON PIPE JOINTS SHALL BE RESTRAINED.
7) TANK FOUNDATION SHALL BE LEVEL WITHIN A TOLERANCE OF +/- 0.01' IN 10' AND WITHIN +/- 0.02' OVERALL.
8) DESIGN LOADS SHALL BE IN ACCORDANCE WITH EAGLE COUNTY REQUIREMENTS.
   A) GROUND LEVEL SNOW LOAD = 65 PSF.
   B) BASIC WIND SPEED = 90 MPH, 3 SECOND GUST, EXPOSURE C.
   C) SEISMICE DESIGN CLASS D.
9) REFERENCE SUB SOIL STUDY, PREPARED OCTOBER 25, 2007 BY TETRA TECH, INC., JOB NO. 7390408
   A) ALLOWABLE SOIL BEARING PRESSURE SHALL BE 2500 PSF.
   B) TANK SHALL BE FOUNDED ON A GRANULAR BASE AS SHOWN.
   C) EXCAVATION SHALL EXTEND TO A DEPTH AS NEEDED TO PROVIDE CONSISTENT BEARING SURFACES AS DIRECTED BY SOILS ENGINEER AT TIME OF EXCAVATION.
   D) GRANULAR FILL MATERIAL SHALL BE APPROVED BY SOILS ENGINEER PRIOR TO PLACEMENT.
   E) GRANULAR FILL MATER SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY OR AS APPROVED BY SOILS ENGINEER.
   F) TANK BASE CONSTRUCTION SHALL BE TESTED AND INSPECTED BY SOILS ENGINEER.
   G) PIPE TRENCH BELOW THE TANK SHALL BE OVER EXCAVATED A MINIMUM OF 2 FEET BELOW THE PIPE AND FILLED WITH GRANULAR MATERIAL COMPACTED TO 100% OF STANDARD PROCTOR DENSITY.
10) REFER TO SITE GRADING PLAN FOR LOCATION OF TANK, PIPING AND GRADING WORK AROUND TANK.

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ARCHITECTURE
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PLANNING
STRUCTURAL ENGINEERING
POST OFFICE BOX 409
3386 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6348
F 970 328 1635
WWW.JK-INC.COM

NO.	DATE	DESCRIPTION	CHK
1	10.9.07	ADDED DWK REVIEW	JMD
A	11.20.07	UPDATED PER TOA COMMENTS DATED 11.14.07	BT

REVISIONS ISSUE

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: WATER TANK DETAILS

STAMP

JOB NO. EA07183

SHEET NO. 25

INTEGRITY FROM THE GROUND UP

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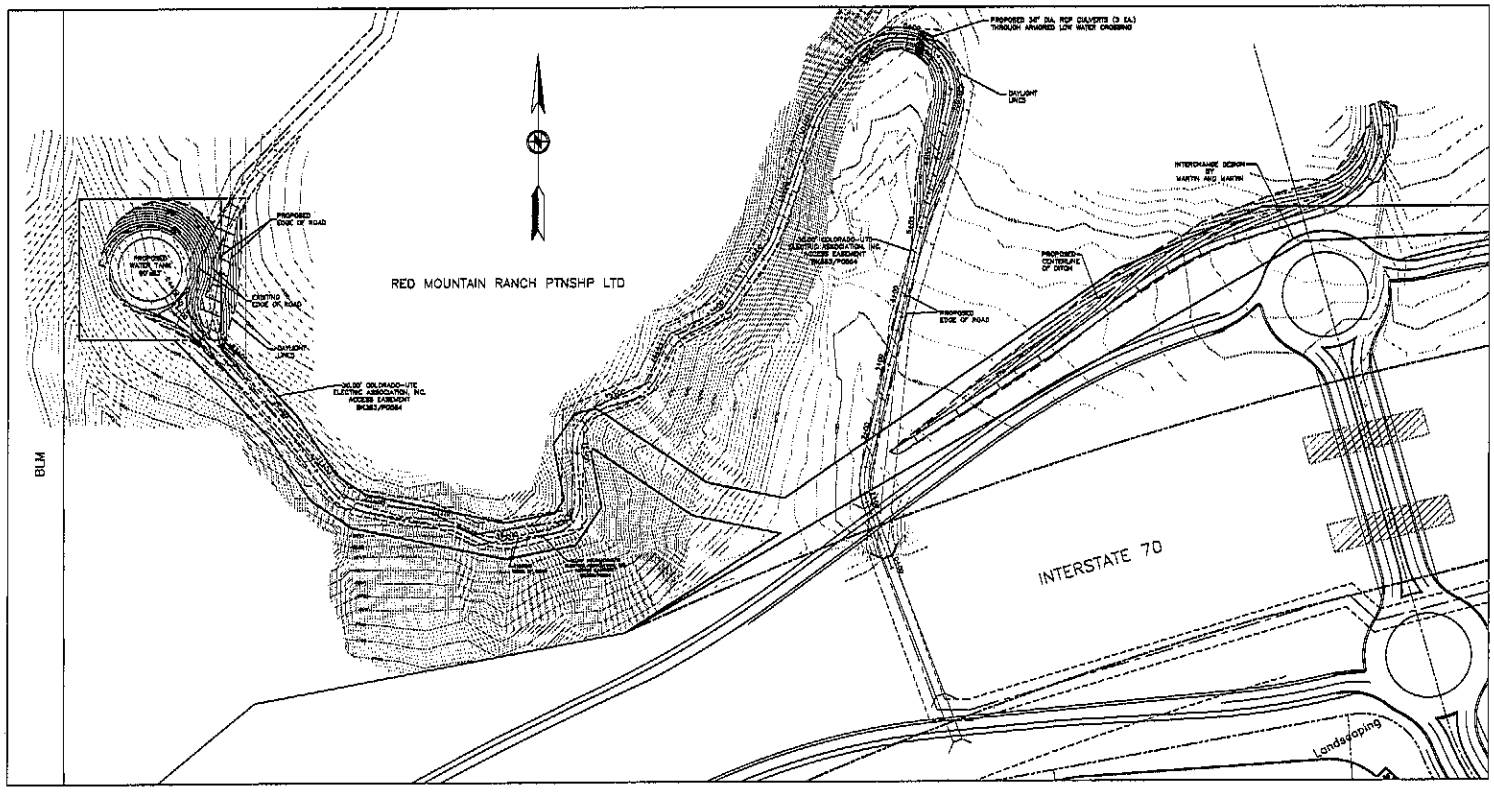
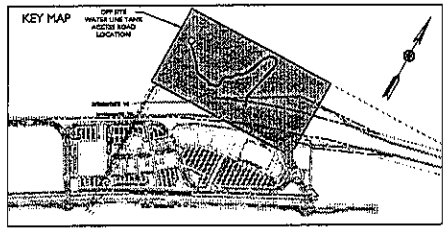
EAGLE RIVER STATION
OFFSITE DESIGN
WATER TANK ACCESS ROAD
OVERALL PLAN





GRAPHIC SCALE
(IN FEET)
1 inch = 80 ft.

1 POLLUTION & EROSION CONTROL

1.1 Permanent Controls

Stormwater drainage is treated in grass-lined swales or overland sheet flow prior to discharge. Straw bales installed in the roadside ditches at regular intervals will also provide initial erosion and sedimentation control until natural vegetation is well established. Permanent rprap and/or energy dissipation structures will be constructed at the outlet of the culverts where required. The riprap and energy dissipation will be designed to control erosion by decreasing discharge velocities at the discharge point of culverts prior to entering natural drainage ways.

The cut and fill slopes required for water line construction will be seeded with native vegetation, which will require little maintenance. Runoff from water line on construction areas will be treated with combination of silt fence and sedimentation basins. Areas near riparian areas will require special care including cut-off trenches, positive drainage away from waterbodies where possible and spray mulch and/or netting to reduce erosion until permanent vegetation is established.

Contractors on individual lots and development tracts should be required to provide runoff control consistent with the drainage design of the overall project. The methods to be used will be similar to the methods outlined for construction of subdivision improvements.

1.2 Temporary Controls

Temporary controls will be required for initial construction operation and for road and drainage construction and final landscaping. The installation of underground utilities including, but not limited to, sewer and water will require the control of erosion and sedimentation. The temporary controls will be maintained for a minimum period of one year or for the full growing season until re-seeded areas are well established.

A number of procedures will by implemented for temporary control of erosion and sedimentation during construction operations. These procedures are classified as follows:

Exposure of unstable soils will be minimized. The contractor will be limited to opening a maximum of 100 feet of trench along the pipeline route. This will require the temporary flow of ground water required by an dewatered from the excavation. This will also reduce the surface area of the spoils pile, which will potentially be subjected to erosion during storm events.

Backfill compaction will be tightly controlled. This will reduce the erosion potential of backfilled areas by improving the cohesiveness of the soils. The contractor will be required to meet 95-100% of maximum density compaction requirements, depending upon location as defined in the project specifications.

Storm water and dewatering will be controlled. The contractor will have some latitude in his approach here; however, the approved documents will require strict adherence to applicable County and State water quality requirements. We will provide the following suggestions for control.

The dewatering pipeline routes will be near or in new road or utility construction. Temporary ditches will handle high flows during storm events. The temporary ditches will be used to convey dewatering flows or surface runoff during storm events. If erosion begins to occur, ditch stabilization will involve the use of erosion control fabric, hay and/or mulch.

Water moving down the ditch will pass through a filtering device, which will reduce sediment load prior to the water entering the natural surface watercourses. The filter system will be constructed of a hay-bale dam to reduce velocity and filter cloth fence for filtration.

A second alternative will be to construct sediment and control ponds on the downstream side of road construction, between the road and natural surface watercourses. The ponds will employ a combination of earth and manmade embankment or future water drains, and an outlet pipe or weir to the discharge point. As much as possible, discharge will be routed through natural or sythetical swales to achieve additional treatment prior to entering any natural watercourse or wetland area.

Field adjustments. The Engineer will be providing resident services and the Owner will be present during the majority of the construction. Field modification will be made as necessary to minimize erosion and sedimentation.

1.3 Mulch Stabilization

Mulch stabilization will be used to stabilize exposed soils with non-vegetative materials. The mulch will temporarily protect exposed soil surfaces from erosion damage and reduce silt-rate environmental damage. This practice will be applicable to areas subject to erosion, where the season and other stabilization may not be suitable for grading as conventional sewer or where stabilization is needed during construction or other short periods until more suitable protection can be applied.

Site preparation will basically involve grading disturbed areas as needed and feasible, to permit the use of conventional equipment for applying and anchoring mulch.

The Contractor will employ needed erosion control practices such as shorelines, grade stabilization structures, and berms as required.

The protective materials for mulch stabilization may consist of the following alternatives:

1. Unrotted wood grain straw or grass hay at 1.5 to 2 tons per acre is spread uniformly at 70 to 90 pounds per/1000 square feet anchored with a mulch anchoring tool, liquid mulch binders, or netting tie down.
2. Synthetic soil stabilizers may be used under suitable conditions and in sufficient quantities.
3. Wood fiber or paper fiber mulch at the rate of 1,500 pounds per acre may be applied by hydroseeding.
4. Mulch netting, such as paper, jute excelsior, cotton or plastic, may be used.

Mulch anchoring should be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following Mulch Stabilization Methods, depending upon the size of the area, steepness of the slopes, and costs:

1. Peg and Twine – Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Twine may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross and square pattern. Secure twine around each peg with two or more round turns.
2. Mulch Netting – Staple paper, jute, cotton, excelsior, or plastic netting to the soil surface. Do not use non-degradable netting in areas to be mowed. Netting is usually available in rolls 4 feet wide and up to 300 feet long.
3. Mulch Anchoring Tool – A tractor drawn implement especially designed to punch and anchor mulch into the surface soil. This provides effective maximum erosion control, but its use is limited to those slopes upon which the tractor can operate safely. Tool penetration should be about 3 to 4 inches. On sloping land, the operation should be done on the contour.

The Contractor will have some latitude in which of these methods to use.

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STRUCTURAL ENGINEERING

POST OFFICE BOX 409
1286 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6369
F 970 328 1635
WWW.JK-INC.COM

NO.	DATE	ISSUE
1	10-5-07	SUBMITTAL REVIEW

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: OVERALL WATER TANK ACCESS ROAD PLAN

STAMP

JOB NO. EA07183

SHEET NO. 26

INTEGRITY FROM THE GROUND UP

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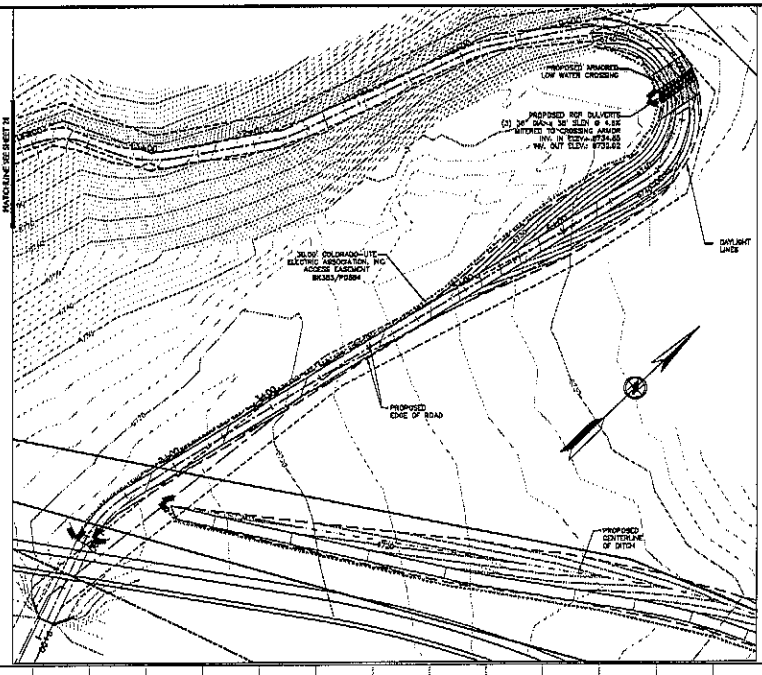
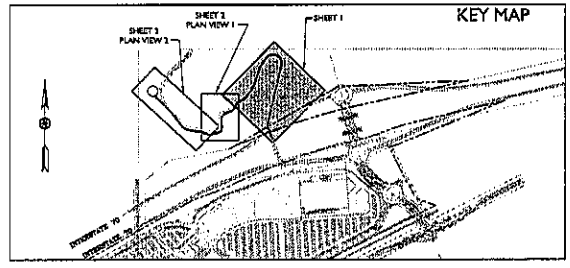
EAGLE RIVER STATION
OFFSITE DESIGN
WATER TANK ACCESS ROAD
PLAN AND PROFILE
STA: 0+00 TO STA: 14+00





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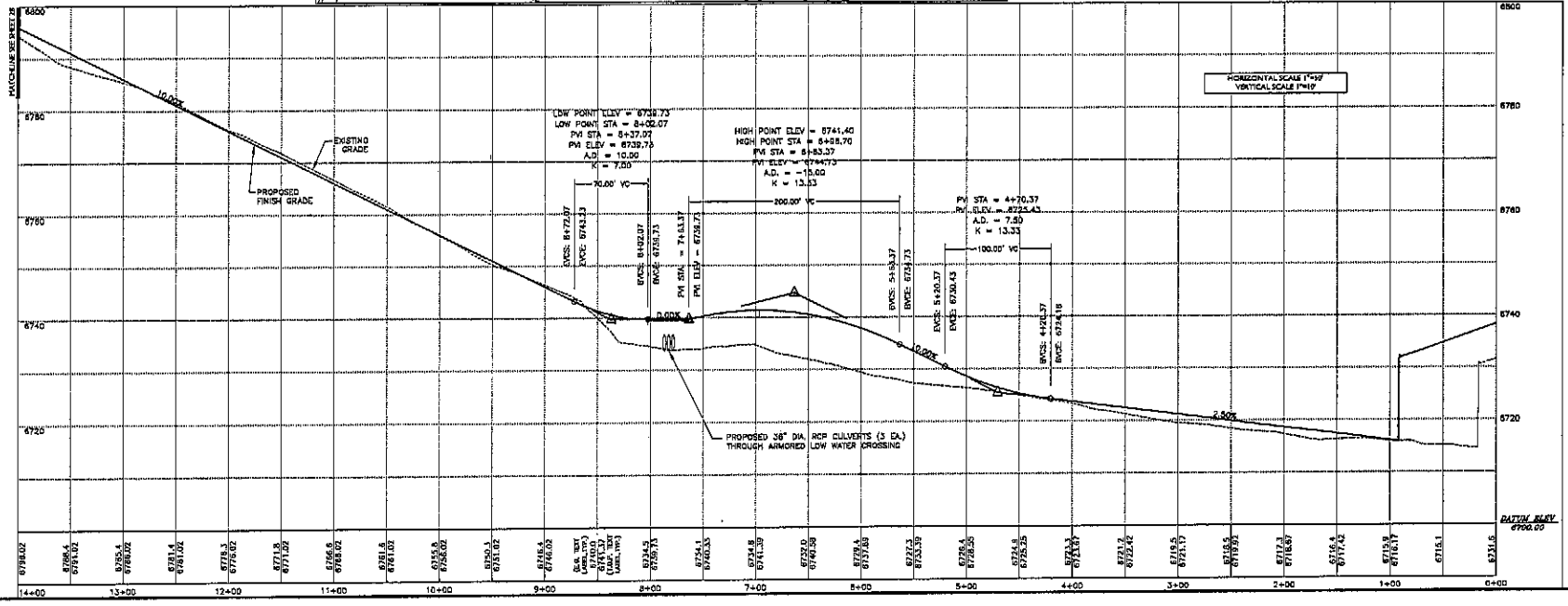

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POST OFFICE BOX 409
1204 CHAMBERS AVE, SUITE 200
EAGLE, COLORADO 81631
P 970 328 6368
F 970 328 1635
WWW.JK-INC.COM

REVISIONS				
NO.	DATE	DESCRIPTION	BY	CHK
1	12-3-07	ISSUED FOR REVIEW		
A	11-28-07	UPDATED PER TOE COMMENTS DATED 11-17-07		

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: TANK ACCESS ROAD PLAN AND PROFILE
STA: 0+00 TO 14+00

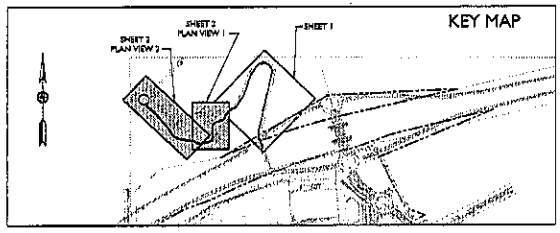
STAMP

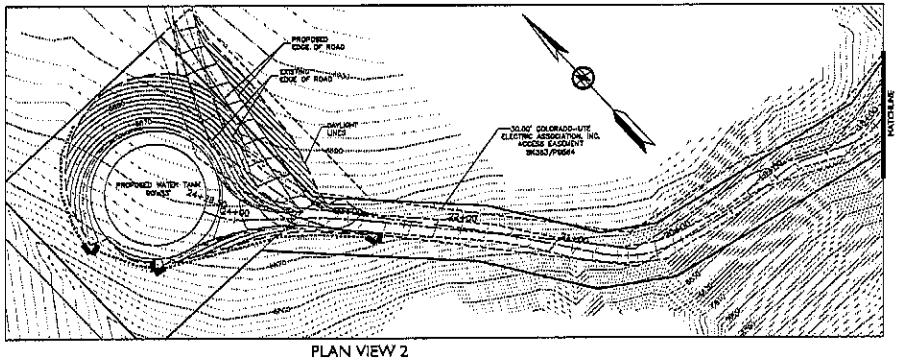
JOB NO. EA07183

SHEET NO. 27

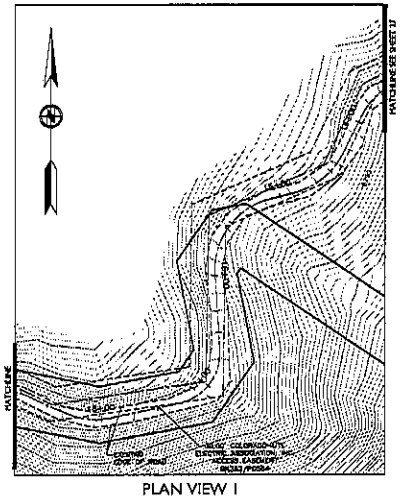
INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
WATER TANK ACCESS ROAD
PLAN AND PROFILE
STA: 14+00 TO STA: 18+00
AND
STA: 18+00 TO STA: 24+28.50

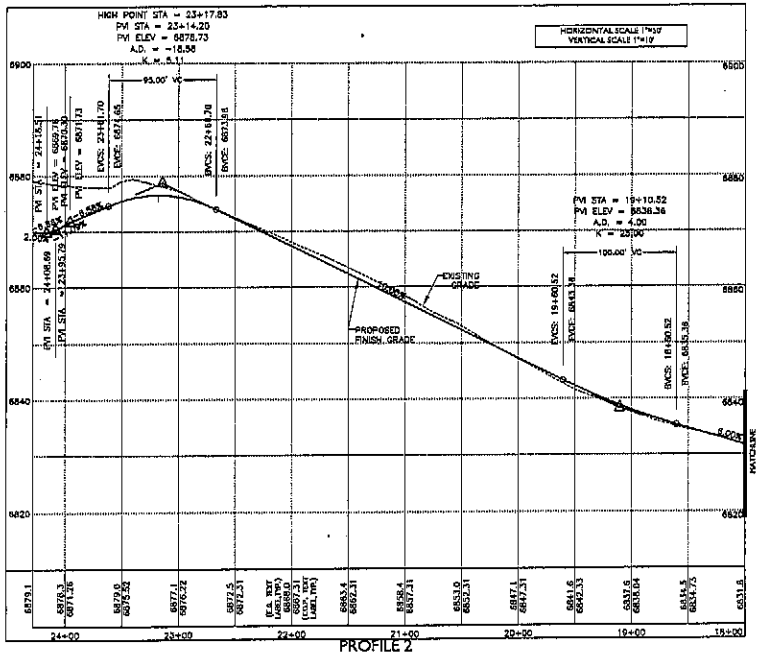




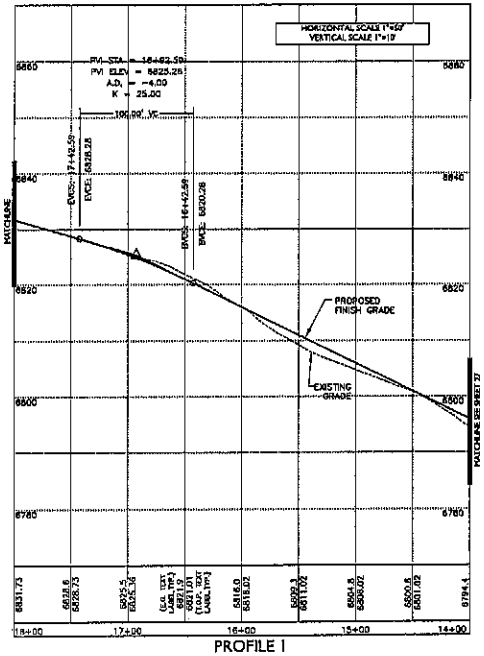
PLAN VIEW 2
STA: 18+00 TO 24+28.50



PLAN VIEW 1
STA: 14+00 TO 18+00



PROFILE 2
STA: 18+00 TO 24+28.50



PROFILE 1
STA: 14+00 TO 18+00

GRAPHIC SCALE

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STRUCTURAL ENGINEERING

POST OFFICE BOX 409
1386 CHAMBERS AVE., SUITE 300
EAGLE, COLORADO 81631
P 970 328 6268
F 970 328 1035
WWW.JK-INC.COM

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK
1	12-3-07	UPDATED PER TOE COMMENTS DATED 11-30-07	RM	
A	11-29-07	ISSUED FOR REVIEW	ST	CHK

PROJECT
EAGLE RIVER STATION - OFFSITE DESIGN

TITLE
TANK ACCESS ROAD PLAN AND PROFILE
STA: 14+00 TO 24+28.50

STAMP

JOB NO. EA07183

SHEET NO. 28

INTEGRITY FROM THE GROUND UP

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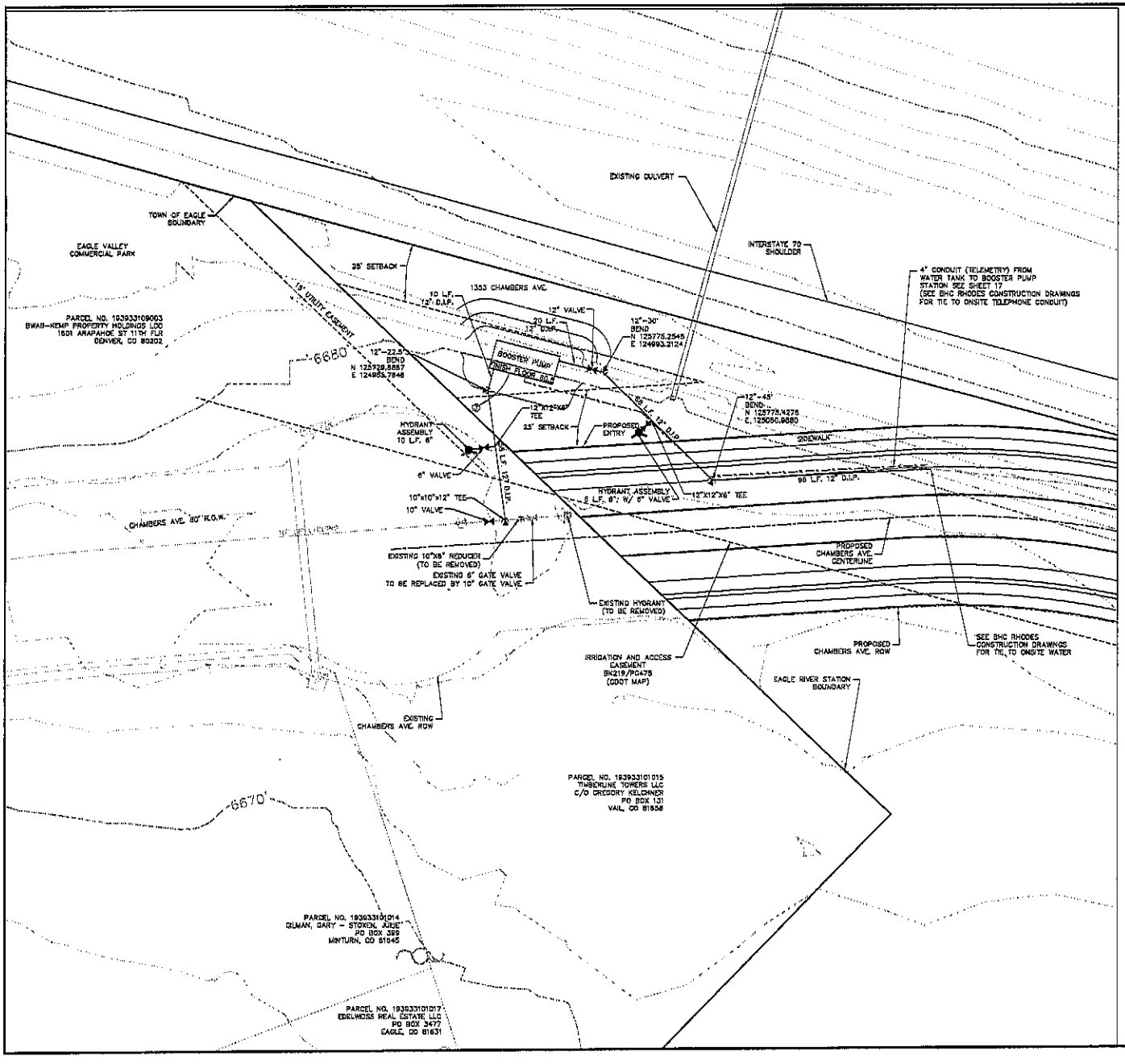


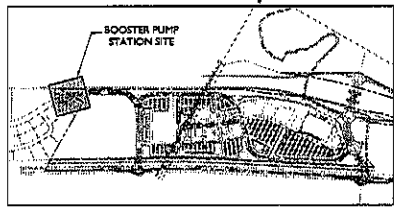
EAGLE RIVER STATION
OFFSITE DESIGN
BOOSTER PUMP STATION PLAN

GRAPHIC SCALE

(IN FEET)

1 inch = 20 ft.

KEY MAP

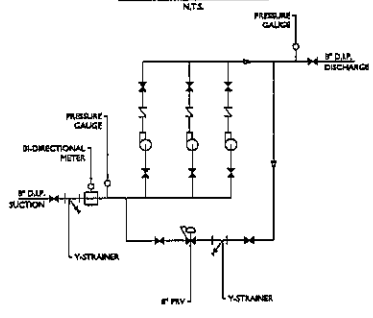


NOTES:

1) REFER TO J&K INC. PRELIMINARY WATER & SEWER IMPACT REPORT DATED OCTOBER 11, 2007 J&K JOB # EA07163.
2) TOWN OF EAGLE TO SUPPLY BOOSTER PUMP STATION SPECIFICATONS. ALONG WITH TELEMETRY REQUIREMENTS.
3) FOR SHOP DRAWING SUBMITTALS TO BE REVIEWED BY TOWN ENGINEER AND RECORD ENGINEER PRIOR TO APPROVAL.
4) PROVIDE THREE PUMPS WITH 282 GPM CAPACITY EACH AT 112 TDH.
5) ALLOW FOR REVERSE FLOW BYPASS THROUGH 6" PRV VALVE, 30 PSI OUT, CLA-Val 92A-07ABCS.
6) PROVIDE BI-DIRECTIONAL FLOW METER MODEL UM-06-R ULTRAMAG OR EQUAL.
7) PRESSURE GUAGES- ASHCROFT MODEL 1279XLL
SUCTION SIDE 0-100 PSI
DISCHARGE SIDE 0-200 PSI
8) PROVIDE HEATER AND Pe HUMIDIFIER, SUBMIT PRODUCT DATA.
9) ELECTRICAL SERVICE 3 PHASE, 480 VOLT, SUBMIT ALL ELECTRICAL EQUIPMENT PRODUCT DATA TO RECORD ENGINEER AND TOWN OF EAGLE ENGINEER FOR APPROVAL.

PUMP SCHEMATIC

N.T.S.



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POST OFFICE BOX 409
1286 CHAMBERS AVE., SUITE 300
EAGLE, COLORADO 81631
P 970 328 6348
F 970 328 6635
WWW.JK-ENG.COM

REVISIONS	ISSUE	DATE	BY	CHK
1	ISSUED FOR REVIEW	10-5-07	JMC	

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: BOOSTER PUMP STATION PLAN

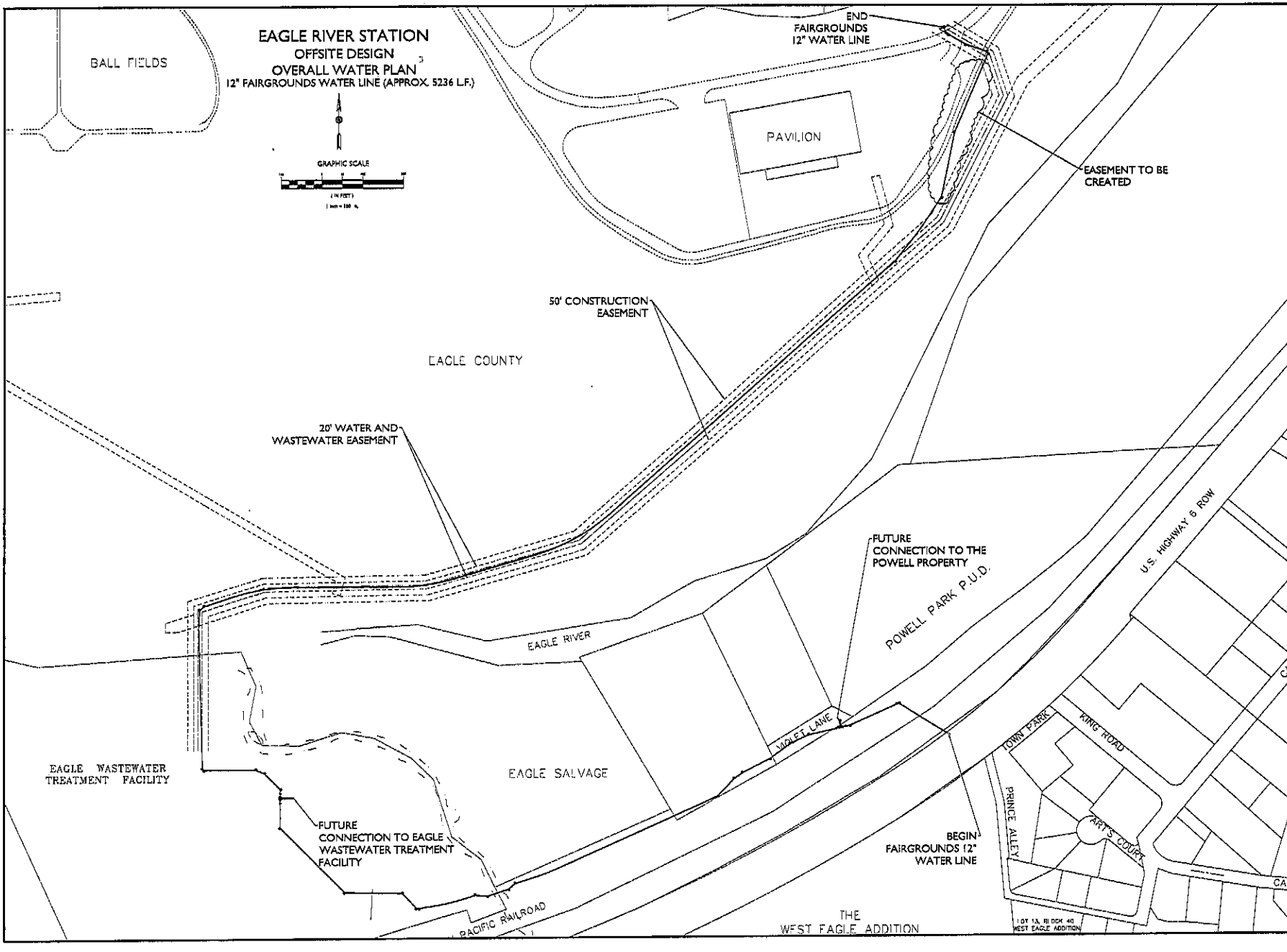
STAMP

JOB NO. EA07163

SHEET NO. 29

INTEGRITY FROM THE GROUND UP

S:\2004 Projects\EA07163\Eagle\Civil\Offsite\EA07163 BPS Site.dwg, 10/5/2007 10:40:31 AM, Adobe PDF 6.0.0.D.PC, 1:1



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EAGLE, COLORADO 81631
P 970 328 6360
F 970 328 1635
WWW.JK-INC.COM

NO.	DATE	ISSUED FOR REVIEW	DESCRIPTION	BY	CHK
1	10/31/07			ASD	

REVISIONS

PROJECT: EAGLE RIVER STATION - OFF SITE DESIGN

TITLE: OVERALL FAIRGROUNDS WATER PLAN

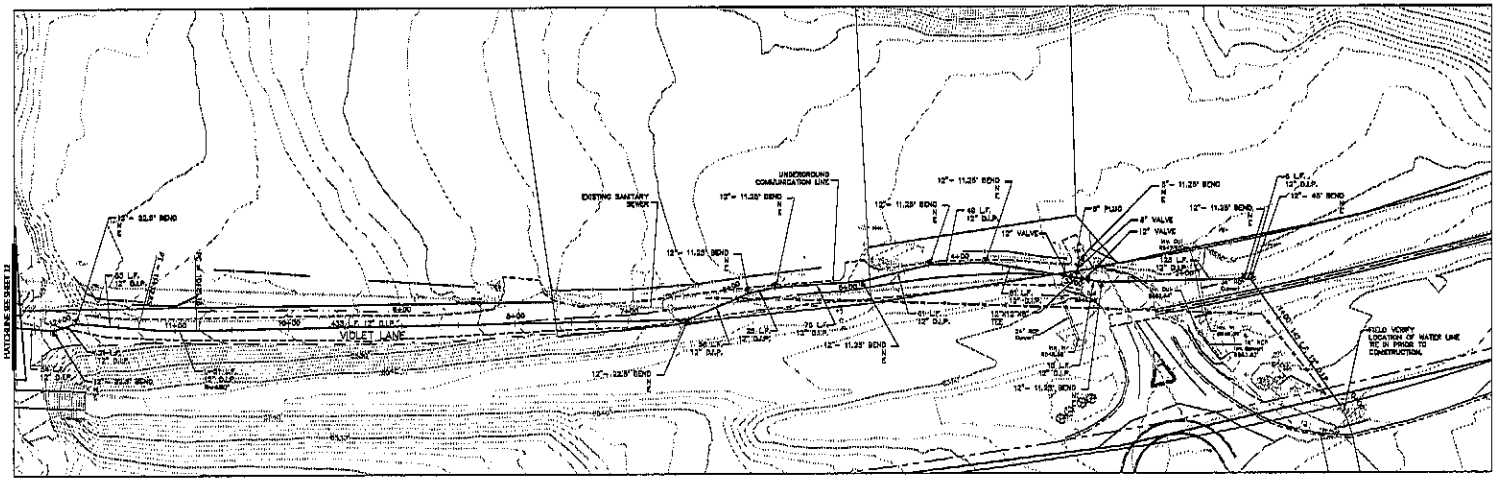
STAMP

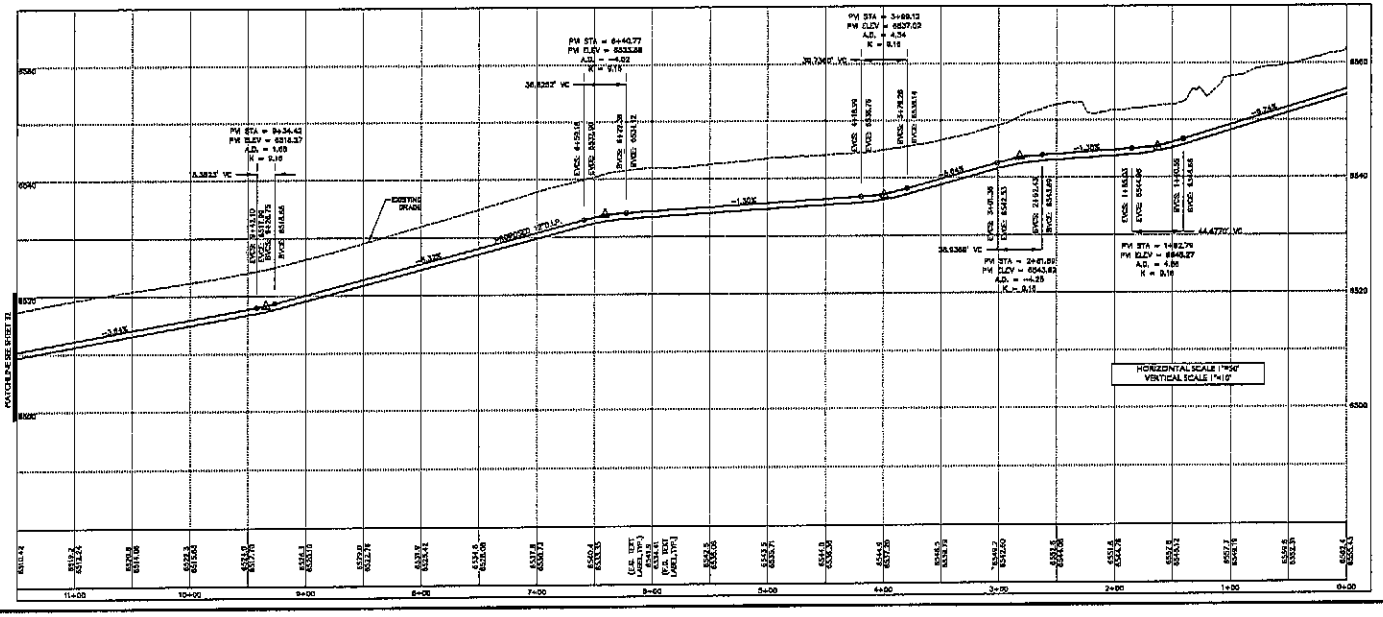
JOB NO. EA06146

SHEET NO. 30

INTEGRITY FROM THE GROUND UP

EAGLE RIVER STATION
OFFSITE DESIGN
FAIRGROUNDS 12"
WATER LINE PLAN & PROFILE
STA: 0+00 TO 11+50





GRAPHIC SCALE

(IN FEET)

1 inch = 50 ft.

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POST OFFICE BOX 409
1386 CHAMBERS AVE., SUITE 200
EAGLE, COLORADO 81631
P 970 328 6268
F 970 328 1035
WWW.JK-INC.COM

REVISIONS				
ISSUE	NO.	DATE	DESCRIPTION	BY	CHK
	1	10-3-07	ISSUED FOR REVIEW	ASD	

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: FAIRGROUNDS 12" WATER LINE
STA: 0+00 TO 11+50

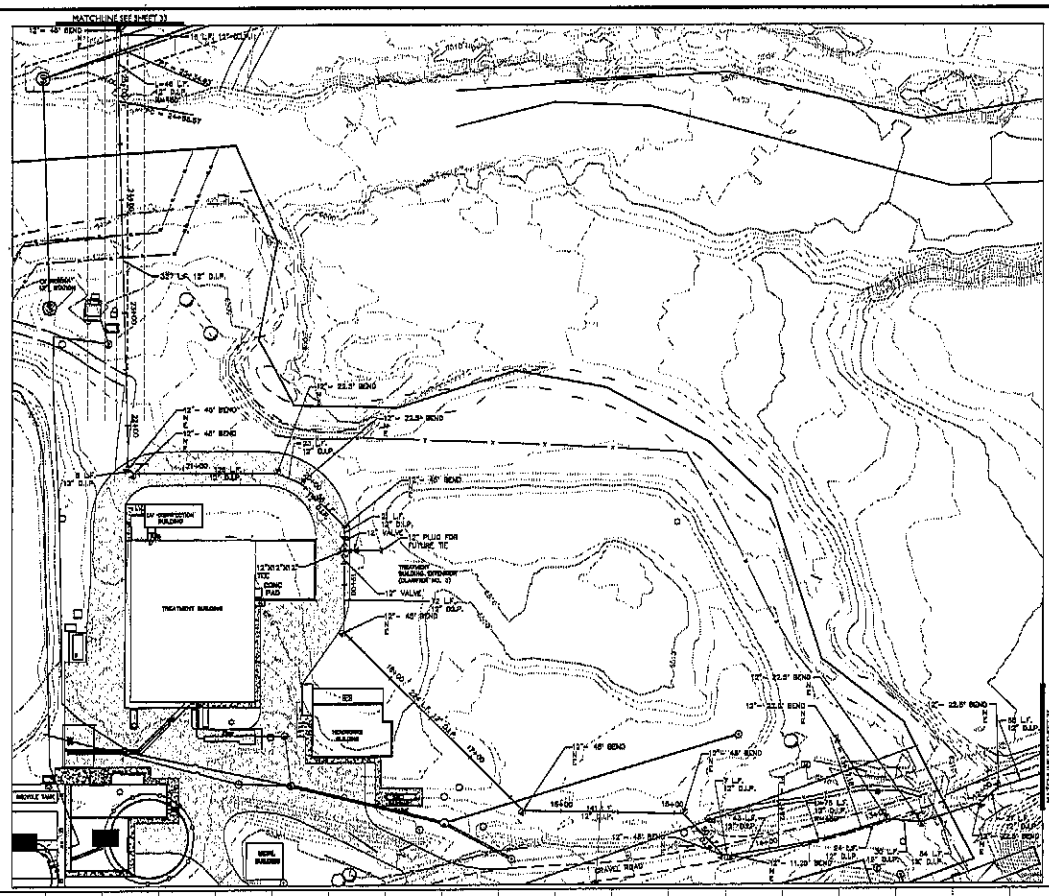
STAMP

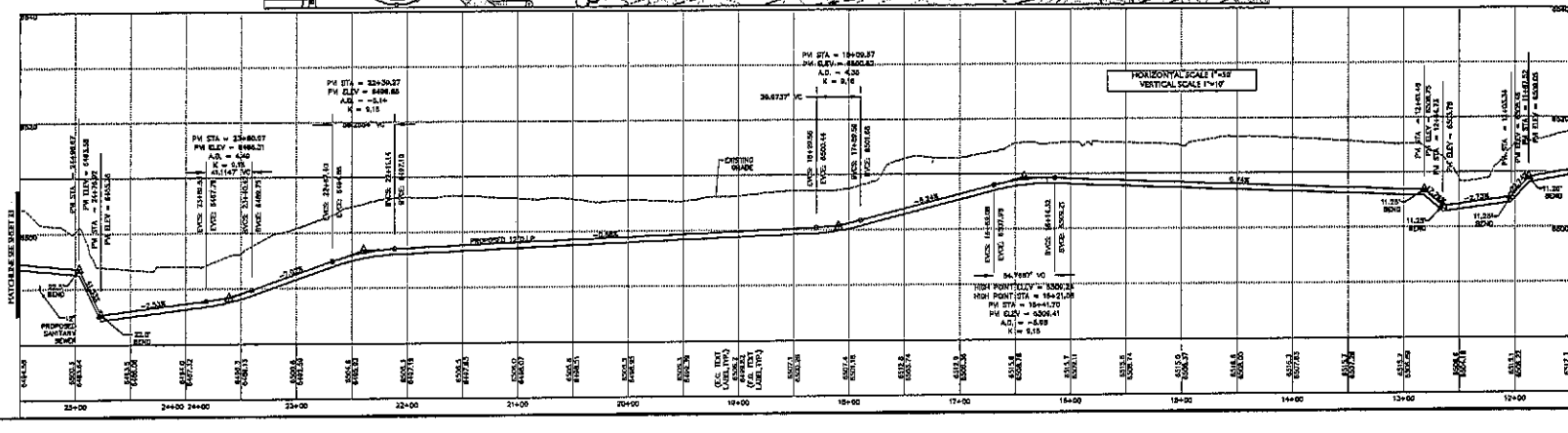
JOB NO. EA07183

SHEET NO. 31

INTEGRITY FROM THE GROUND UP™

EAGLE RIVER STATION
OFFSITE DESIGN
FAIRGROUNDS 12"
WATER LINE PLAN & PROFILE
STA: 11+50 TO 25+50





GRAPHIC SCALE

(IN FEET)

1 inch = 50 ft.

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1386 CHAMBERS AVE., SUITE 200
EAGLE, COLORADO 81631
P 970 328 6268
F 970 328 1038
WWW.JK-INC.COM

REVISIONS				
NO.	DATE	DESCRIPTION	BY	CHK
1	10-1-07	ISSUED FOR REVIEW		

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: FAIRGROUNDS 12" WATER LINE
STA: 11+50 TO 25+50

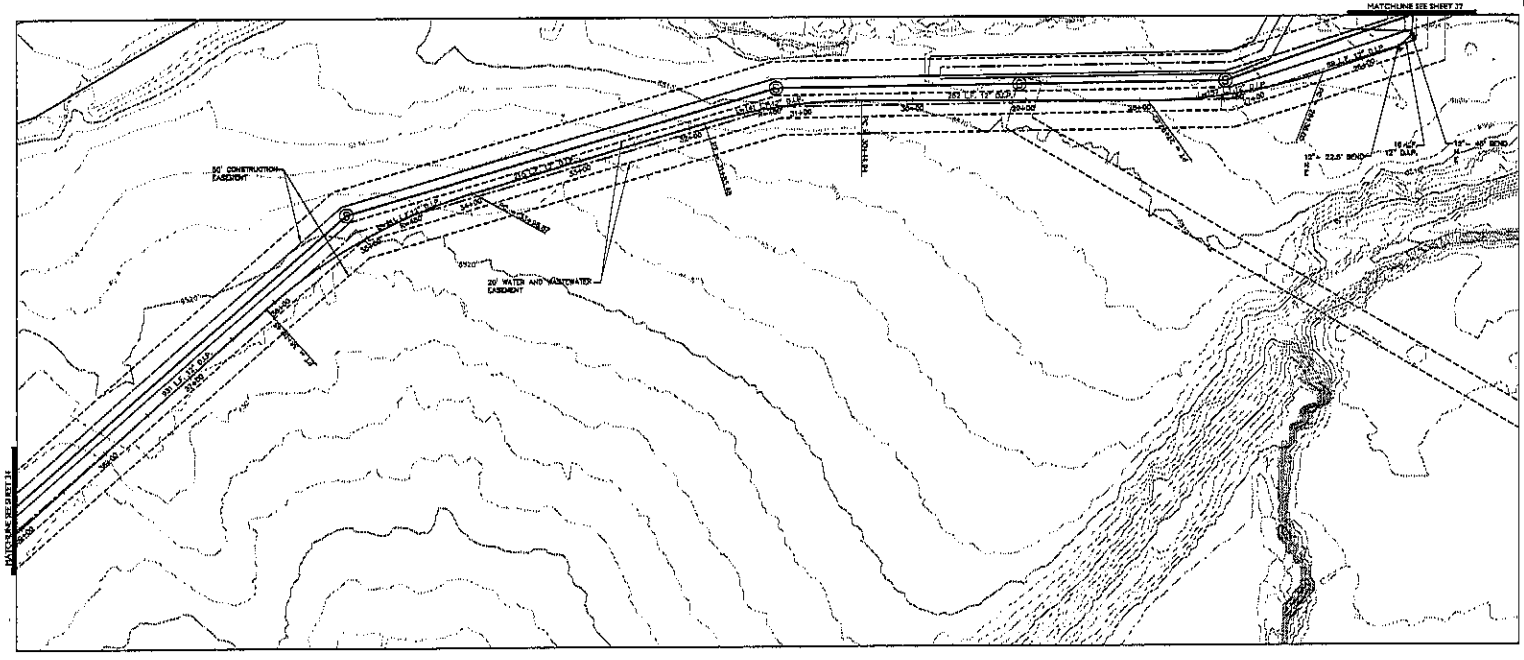
STAMP

JOB NO. EA07183

SHEET NO. 32

INTEGRITY FROM THE GROUND UP

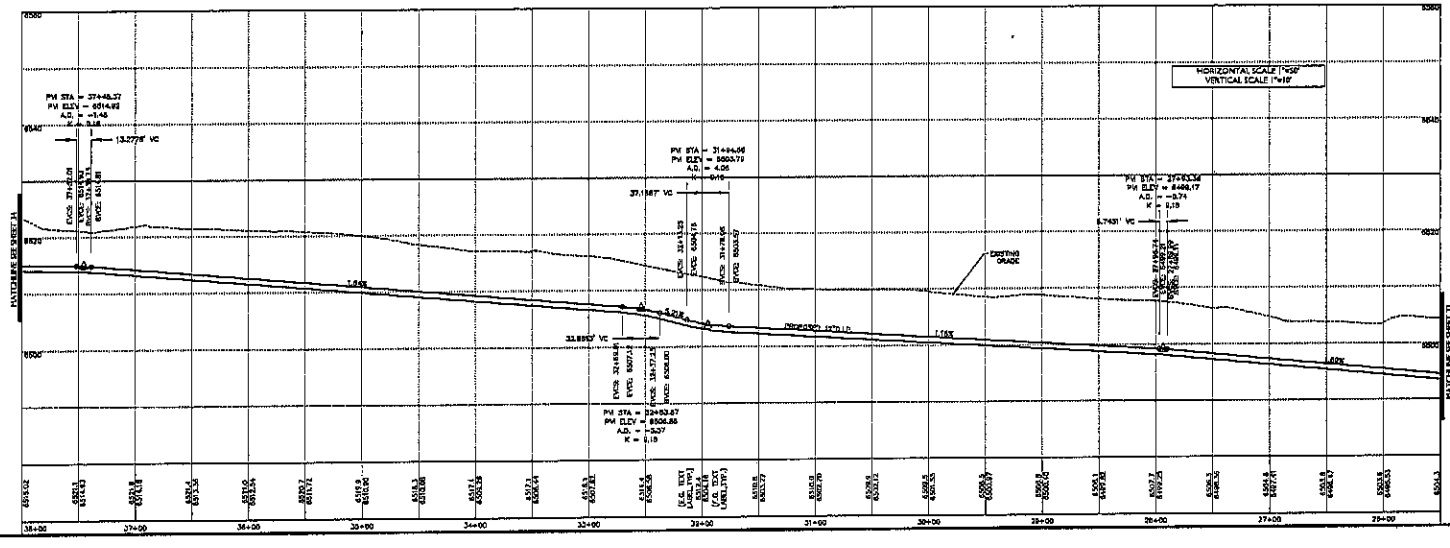
EAGLE RIVER STATION
OFFSITE DESIGN
FAIRGROUNDS 12"
WATER LINE PLAN & PROFILE
STA: 0+00 TO 0+00



GRAPHIC SCALE

(IN FEET)

1 inch = 10 %



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EAGLE, COLORADO 81631
P 970 328 6360
F 970 328 1035
WWW.JK-INC.COM

REVISIONS				
SCALE	1	10-1-07	ISSUED FOR REVIEW	
	NO.	DATE	DESCRIPTION	

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

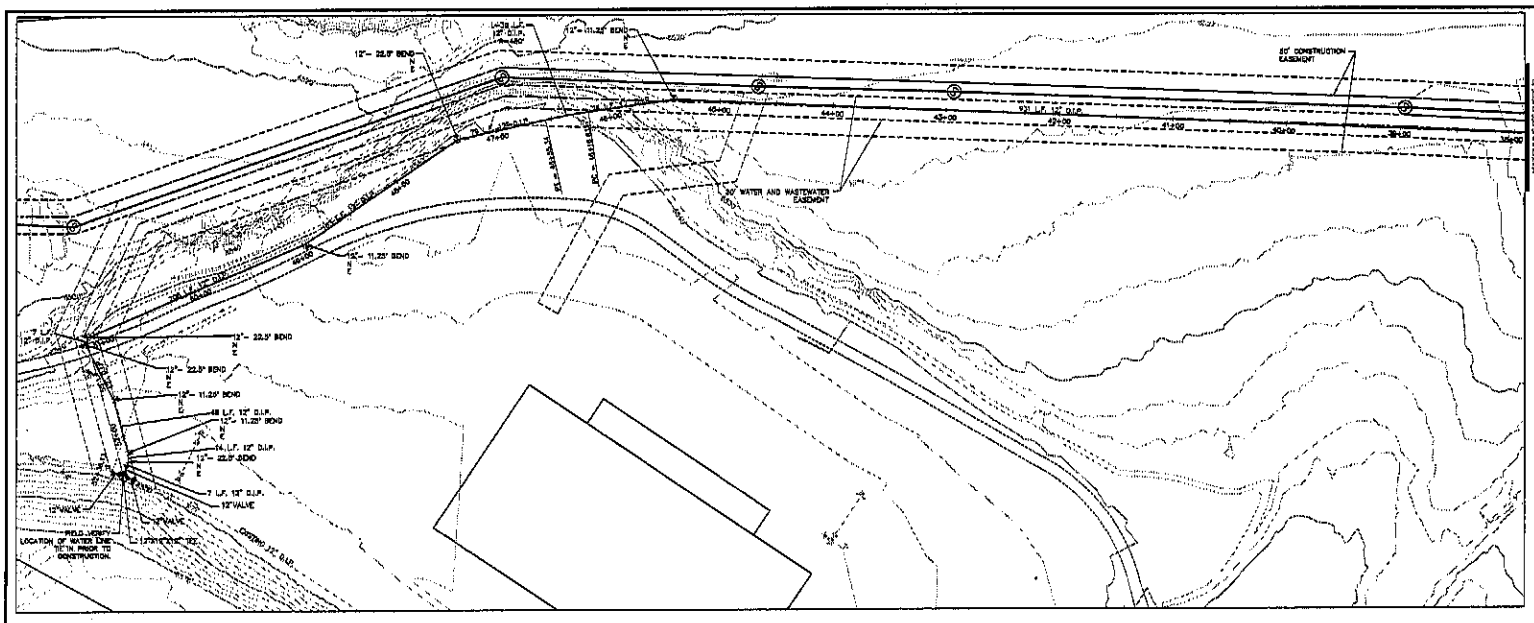
TITLE: FAIRGROUNDS 12" WATER LINE
STA: 25+50 TO 38+00

STAMP

JOB NO. EA07183

SHEET NO. 33

INTEGRITY FROM THE GROUND UP



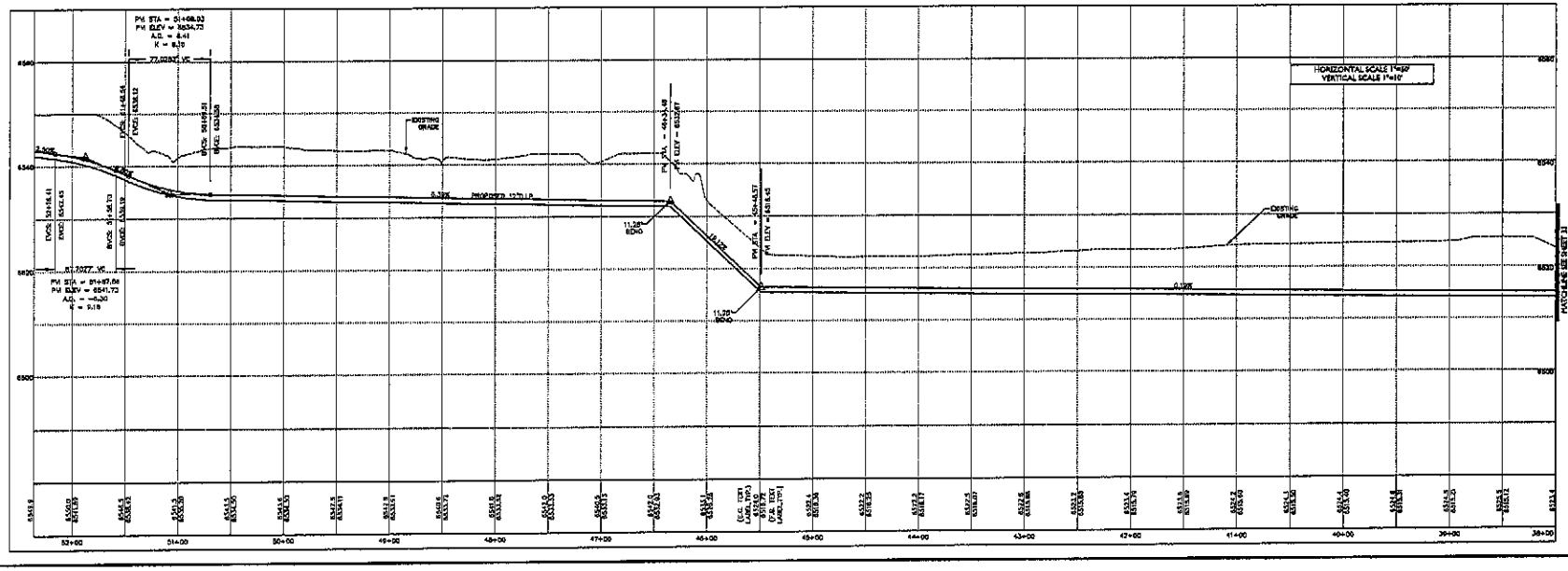
EAGLE RIVER STATION

OFFSITE DESIGN
FAIRGROUNDS 12"
WATER LINE PLAN & PROFILE
STA: 38+00 TO 52+36.13

GRAPHIC SCALE

(IN FEET)

1 inch = 30 ft.



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1286 CHAMBERS AVE., SUITE 200
EAGLE, COLORADO 81631
P 970 328 6566
F 970 328 1033
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NO.	DATE	DESCRIPTION	BY	CHK
1	10-3-07	ISSUED FOR REVIEW		

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: FAIRGROUNDS 12" WATER LINE
STA: 38+00 TO STA: 52+36.13

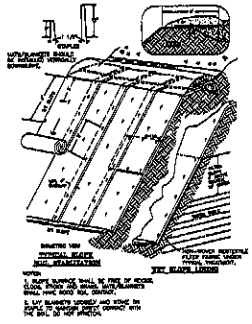
STAMP

JOB NO. EA07183

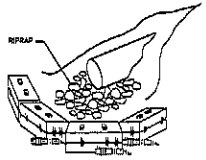
SHEET NO. 34

INTEGRITY FROM THE GROUND UP

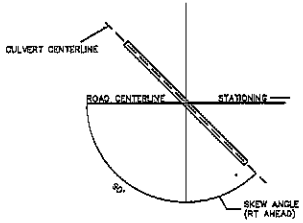
EAGLE RIVER STATION
DRAINAGE AND EROSION CONTROL DETAILS



EROSION BLANKETS & TURF REINFORCEMENT MATS SLOPE INSTALLATION
N.T.S.

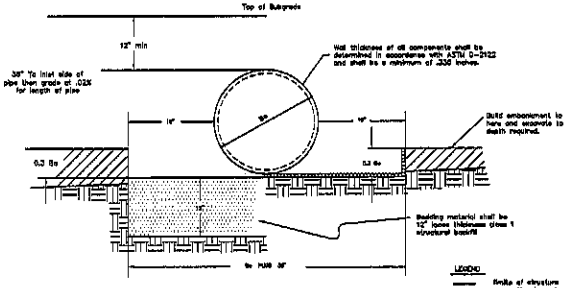


CULVERT OUTLET DETAIL
N.T.S.

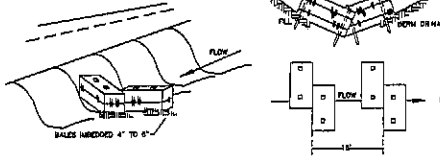


CULVERT SKEW ANGLE
N.T.S.

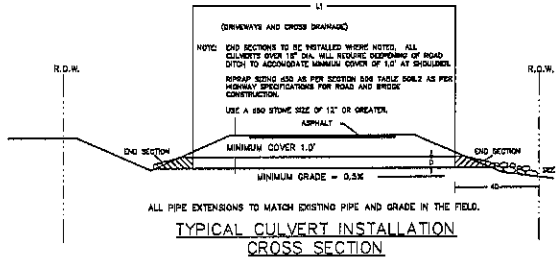
INSTALLATION OF POLYETHELENE CULVERT WITH END SECTIONS



TYPICAL CULVERT DETAIL
N.T.S.

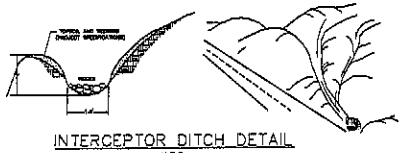


STRAW CHECK DAM DETAIL
N.T.S.

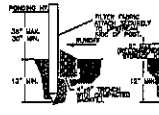


ALL PIPE EXTENSIONS TO MATCH EXISTING PIPE AND GRADE IN THE FIELD.

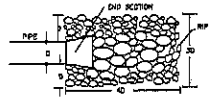
TYPICAL CULVERT INSTALLATION CROSS SECTION
N.T.S.



INTERCEPTOR DITCH DETAIL
N.T.S.

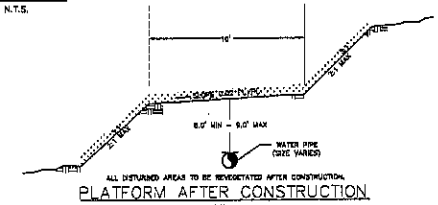


SILT FENCE
N.T.S.



PLAN VIEW

MINOR DRAINAGE SWALE
N.T.S.



PLATFORM AFTER CONSTRUCTION
N.T.S.

TEMPORARY AND PERMANENT SEEDING INFORMATION

SHORT TERM PROTECTION:
MORE THAN 30 DAYS, BUT NOT MORE THAN TWO GROWING SEASONS.

SPECIES	SEASON	DRILLED LBS/ACRE
1 – ANNUAL RYEGRASS	COOL	30
2 – OATS	COOL	60
3 – CEREAL RYE	COOL	40
4 – WHEAT – WINTER	COOL	60
5 – WHEAT – SPRING	COOL	60
6 – BARLEY	COOL	50
7 – MILLET	WARM	30
8 – HYBRID SUDAN	WARM	15
9 – SORGHUM	WARM	15

PLANTING DEPTH IS TO BE 1/2 – 1 INCH

PLS = PURE LIVE SEED. DRILLED RATES ARE FOR SLOPES 4:1 OR LESS AND WITH FAVORABLE TOPSOIL. BROADCAST RATES OF SEED ON SLOPES 4:1 OR LESS WILL BE DOUBLE THE DRILLED RATES. FOR SLOPES GREATER THAN 4:1 BROADCAST RATES WILL BE EQUAL TIMES THE DRILLED RATES.

FOR PERMANENT SEEDING:
FOR SAND AND SANDY LOAM SOILS, SLOPES < 3:1 – DRILL DEPTH 1/4" TO 3/4"

SPECIES	% OF MIX	DRILLED POUNDS OF PLS/ACRE
STREAMBANK WHEATGRASS	30%	6.00
SD 2000-BLUE FESCUE	20%	4.00
DWARF PERENNIAL RYEGRASS	10%	2.00
RETHENS-CANADA BLUEGRASS	15%	3.75
TOTAL	100%	35.00

PLS = PURE LIVE SEED. DRILLED RATES ARE FOR SLOPES 4:1 OR LESS AND WITH FAVORABLE TOPSOIL. BROADCAST RATES OF SEED ON SLOPES 4:1 OR LESS WILL BE DOUBLE THE DRILLED RATES. FOR SLOPES GREATER THAN 4:1 BROADCAST RATES WILL BE EQUAL TIMES THE DRILLED RATES.

A MULCH CONSISTING OF LONG STEMMED, WEED AND SEED FREE GRASS HAY SHOULD BE USED TO PROTECT THE SITE AFTER GRASS SEED IS PLANTED. APPLY ONE AND ONE-HALF TO TWO TONS PER ACRE. THIS IS APPROXIMATELY ONE STANDARD RECTANGULAR BALE PER 1,000 SQUARE FOOT AREA. FIFTY PERCENT OF THE MULCH, BY WEIGHT, SHOULD BE STEMS AT LEAST 10 INCHES LONG. AFTER SPREADING THE MULCH, A STRAW MACHINE SHOULD BE USED TO ANCHOR THE GRASS STEMS ABOUT FOUR INCHES DEEP. THIS SHOULD BE DONE PERPENDICULAR TO THE PREVAILING WIND DIRECTION OR ON SLOPING GROUND, ON THE CONTOUR. CRIMPED GRENTS MANY OF THE STEM PIERCE VERTICALLY WHICH WILL REDUCE WIND VELOCITIES AT THE SOIL SURFACE AND PROMOTE INFILTRATION OF RUNOFF WATER.

EROSION AND SEDIMENT CONTROL NOTES

NOTE: SEE STANDARD M-208-1 OF THE COLORADO DEPARTMENT OF TRANSPORTATION M&S STANDARDS FOR TEMPORARY EROSION CONTROL, LATEST EDITION.

1) ENGINEER WILL FIELD VERIFY AT TIME OF CONSTRUCTION.

2) PERMANENT EROSION CONTROL TO BE PLACED AFTER CUT AND FILL SLOPES ARE IN PLACE. ENGINEER WILL DESIGNATE AREAS FOR EROSION CONTROL, AND DESIGNATE TYPE OF EROSION CONTROL.

3) CONTRACTOR RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF TEMPORARY EROSION CONTROL IF ANY AREA IS EXPOSED FOR LONGER THAN 14 DAYS, MULCH STABILIZATION WILL BE USED.

4) PLAN AND EXECUTE CONSTRUCTION BY METHODS TO CONTROL SURFACE DRAINAGE FROM CUTS AND FILLS, FROM BORROW AND WASTE DISPOSAL AREAS. PREVENT EROSION AND SEDIMENTATION WITH THE USE OF SILT FENCES AND SEDIMENT BARRIERS.

4.1) SILT FENCE – INSTALL BY DRIVING STAKES ON SITE. ATTACH SILT FENCE FABRIC, BACKFILL AND COMPACT.

5) MINIMIZE AMOUNT OF BARE SOIL EXPOSED AT ONE TIME.

6) PROVIDE TEMPORARY MEASURES SUCH AS BERMS, SWALES AND DRAINS, TO PREVENT WATER FLOW.

7) CONSTRUCT FILL AND WASTE AREAS BY SELECTIVE PLACEMENT TO AVOID EROSIVE SURFACE SILT OR CLAYS.

8) PERIODICALLY INSPECT EARTHWORK TO DETECT EVIDENCE OF EROSION AND SEDIMENTATION; PROMPTLY APPLY CORRECTIVE MEASURES IN ACCORDANCE WITH EROSION AND SEDIMENT CONTROL REQUIREMENTS OF ENGINEER.

DRAINAGE CONSTRUCTION NOTES

1) ALL CONSTRUCTION IN ACCORDANCE WITH COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

2) THE ALIGNMENT, GRADE, LINE, DRAINAGE STRUCTURES AND OTHER IMPROVEMENTS SHOWN ON PLANS ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD TO MEET FIELD REQUIREMENTS.

3) THE ENDS OF ALL CUTS SHALL BE FLARED AND BACKSLOPES FLATTENED TO DISCHARGE SIDE DITCH DRAINAGE AWAY FROM THE BASE OF ADJACENT FILL SLOPES.

4) MINIMUM DITCH SLOPE SHALL BE 0.005 FT/FT. DESIRABLE DITCH SLOPE SHALL BE 0.01 FT/FT.

5) RELOCATED IRRIGATION DITCHES SHALL HAVE A MINIMUM SLOPE OF 0.005 FT/FT AND SHALL HAVE A CROSS SECTION AS CURRENTLY EXISTS.

6) ALL CULVERTS SHALL BE LOCATED AS INDICATED ON PLANS OR AS DIRECTED BY THE ENGINEER. MINIMUM SLOPE SHALL BE 0.005 FT/FT UNLESS OTHERWISE INDICATED.

7) ALL CULVERTS SHALL INCLUDE END SECTIONS CONFORMING TO COLORADO DEPARTMENT OF TRANSPORTATION M&S STANDARD, LATEST EDITION.

8) ALL REINFORCED CONCRETE PIPE WILL BE INSTALLED IN ACCORDANCE WITH COLORADO STANDARD, LATEST EDITION.

DUST CONTROL NOTES

1) EXECUTE WORK BY METHODS TO MINIMIZE RAISING DUST FROM CONSTRUCTION OPERATIONS.

2) PROVIDE POSITIVE MEANS TO PREVENT AIRBORNE DUST FROM DISPERSING INTO THE ATMOSPHERE.

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POST OFFICE BOX 409
1286 CHAMBERS AVE. SUITE 300
EAGLE, COLORADO 81631
P 970 328 6368
F 970 328 1835
WWW.JK-INC.COM

NO	DATE	DESCRIPTION	BY
A	11.19.09	UPDATED PER TAC & CDOT COMMENTS DATED 11-17-09	ABS
1	11.1.09	ISSUED FOR REVIEW	JMC

PROJECT: EAGLE RIVER STATION - OFFSITE DESIGN

TITLE: DRAINAGE AND EROSION CONTROL DETAILS

STAMP

JOB NO. EA07183

SHEET NO. 35

INTEGRITY FROM THE GROUND UP