SOUTHERN DELIVERY SYSTEM PROJECT LOCATION MAP

Legend

- ISOLATION VALVE
- BLOWOFF
- ACCESS MANWAY
- AIR VALVE
- RAW WATER ALIGNMENT
- UTILITY ALIGNMENT

1 0.5 0 1 Miles

N

EL PASO COUNTY

PUEBLO COUNTY

Antelope Road

66" PROPOSED SDS RAW WATER PIPELINE

Hwy 50

Pueblo West

PROPOSED JPS

JUM

Pueblo Reservoir

Arkansas River

Pueblo

Appendix B.1
Raw Water Pipeline

DRAFT

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN
PLAN AND PROFILE DRAWINGS

Colorado Springs Utilities
It's how we're all connected

City of Fountain
Pure Colorado

Security Water and Sanitation Districts

SDS
Southern Delivery System

DRAWINGS

July 2005
(Partially Revised Aug 2008)

CH2MHILL
Colorado Springs, CO 80903

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EXISTING FEATURES

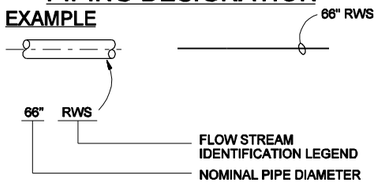
- W — UNDERGROUND UTILITY
- OHE — OVERHEAD ELECTRICAL
- E(UG) — UNDERGROUND ELECTRICAL
- SECTION, PROPERTY AND/OR RIGHT-OF-WAY LINE
- FO — FIBER OPTICS LINE
- G — GAS PIPELINE
- 5000 — CONTOUR W/ELEVATION
- 2 28 — SURVEY CONTROL POINT W/ SECTION NUMBERS
- POWER POLE
- 11 1 12 2 — SECTION CORNER W/ SECTION NUMBERS
- 1 2 — 1/2 SECTION W/ SECTION NUMBERS

NEW FEATURES

- S 10+00 — NEW PIPELINE W/ STATIONING
- BL-26 — BORE HOLE LOCATION
- COMBINATION AIR RELEASE VALVE (PLAN)
- BLOW OFF ASSEMBLY (PLAN)
- TCE — TEMPORARY CONSTRUCTION EASEMENT
- P/E — PERMANENT EASEMENT
- ISOLATION VALVE AND VAULT (PLAN)
- ACCESS MANWAY
- FO — FIBER OPTIC CONDUIT
- SDS FO

PIPING DESIGNATION

EXAMPLE



GENERAL NOTES

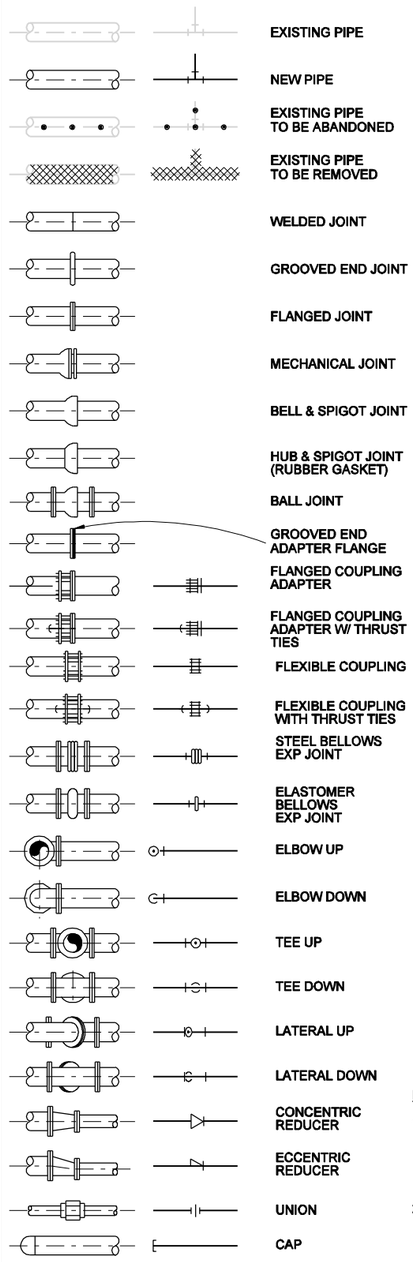
1. DATE OF AERIAL PHOTOGRAPHY, 10/15/2002
2. PROPERTY LINES, RIGHT-OF-WAY LINES AND SECTION LINES SHOWN ARE FROM INFORMATION OBTAINED FROM PUEBLO COUNTY AND EL PASO COUNTY ASSESSORS GIS.
3. ALL EASEMENTS SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
4. FO HANDHOLE LOCATIONS TBD WITH FINAL DESIGN. AT A MINIMUM, HANDHOLES WILL BE INSTALLED ON EITHER SIDE OF ROADWAY CROSSINGS, UTILITY CROSSINGS, AND DRAINAGE CROSSINGS.

INDEX TO DRAWINGS

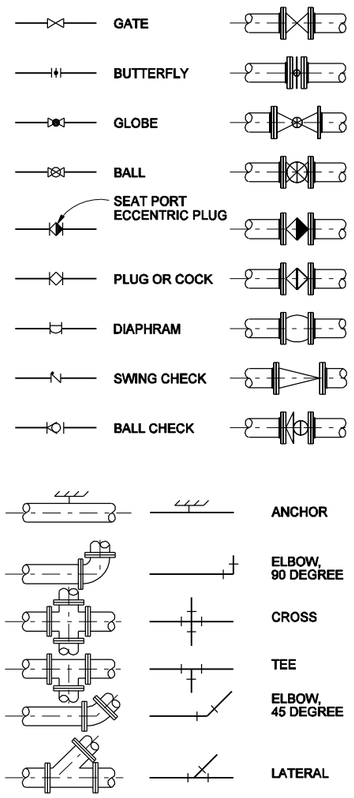
SHEET	DRAWING NO.	SHEET TITLE
		GENERAL DRAWINGS
1	G-1	COVER SHEET
2	G-2	GENERAL NOTES, LEGEND, AND INDEX TO DRAWINGS
3	G-3	SOUTH SECTION PUEBLO COUNTY LOCATION MAP AND PROJECT SITE INFORMATION
4	G-4	SOUTH SECTION PROJECT VICINITY MAP, EL PASO COUNTY LOCATION MAP, AND PROJECT SITE INFORMATION
5	G-5	ABBREVIATIONS
6	G-6	SOUTH PIPELINE KEY PLAN 1 OF 4
7	G-7	SOUTH PIPELINE KEY PLAN 2 OF 4
8	G-8	SOUTH PIPELINE KEY PLAN 3 OF 4
9	G-9	SOUTH PIPELINE KEY PLAN 4 OF 4
10	G-10	SOUTH PIPELINE HYDRAULIC PROFILE 1 OF 3
11	G-11	SOUTH PIPELINE HYDRAULIC PROFILE 2 OF 3
12	G-12	SOUTH PIPELINE HYDRAULIC PROFILE 3 OF 3
		PLAN AND PROFILE
13	PP-1	STA POB S 105+63.83 TO STA S 140+00
14	PP-2	STA S 140+00 TO STA S 207+50
15	PP-3	STA S 207+50 TO STA S 275+00
16	PP-4	STA S 275+00 TO STA S 342+50
17	PP-5	STA S 342+50 TO STA S 410+00
18	PP-6	STA S 410+00 TO STA S 477+50
19	PP-7	STA S 477+50 TO STA S 545+00
20	PP-8	STA S 545+00 TO STA S 612+50
21	PP-9	STA S 612+50 TO STA S 680+00
22	PP-10	STA S 680+00 TO STA S 747+50
23	PP-11	STA S 747+50 TO STA S 812+50
24	PP-12	STA S 812+50 TO STA S 877+50
25	PP-13	STA S 877+50 TO STA S 942+50
26	PP-14	STA S 942+50 TO STA S 1010+00
27	PP-15	STA S 1010+00 TO STA S 1077+50
28	PP-16	STA S 1077+50 TO STA S 1147+50
29	PP-17	STA S 1147+50 TO STA S 1217+50
30	PP-18	STA S 1217+50 TO STA S 1285+00
31	PP-19	STA S 1285+00 TO STA S 1352+00
32	PP-20	STA S 1352+00 TO STA S 1417+50
33	PP-21	STA S 1417+50 TO STA S 1487+50
34	PP-22	STA S 1487+50 TO STA S 1547+50
35	PP-23	STA S 1547+50 TO POE STA S 1604+20.57

PIPE AND FITTING SYMBOLS

DOUBLE LINE / SINGLE LINE



VALVE SYMBOLS



NOTES:

1. ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. ALSO SEE PIPING SPECIFICAITONS.
2. SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.
3. EXISTING PIPE AND EQUIPMENT IS SHOWN LIGHT-LINED AND/OR SCREENED AND IS NOTED AS EXISTING. NEW PIPING AND EQUIPMENT IS SHOWN HEAVY-LINED.

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APVD	APPROVED-BY

NO.	DATE	REVISION	BY	APVD

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CH2MHILL
Colorado Springs, CO 80903

SDS Southern Delivery System

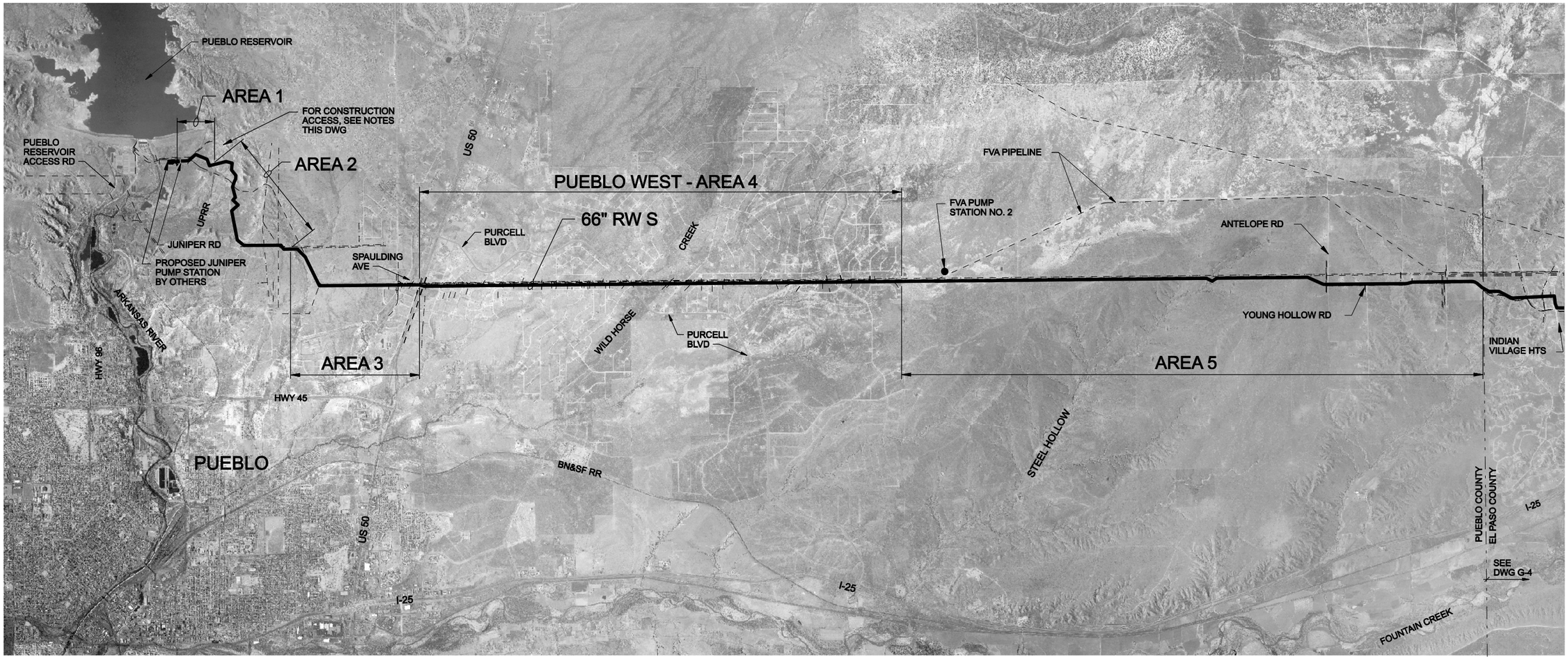
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

GENERAL

GENERAL NOTES, LEGENDS, AND INDEX TO DRAWINGS

SHEET	2
DWG	G-2
DATE	AUG 2008
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-g02.dlv PLOT DATE: 09-AUG-2005 PLOT TIME: 11:35:34



0 3600 7200 10800
Scale In Feet

LOCATION MAP & PROJECT SITE INFORMATION

NOTES:

1. CONSTRUCT GRAVEL CONSTRUCTION ENTRANCE (2710) AT CONSTRUCTION ACCESS LOCATIONS FROM PAVED ROAD.
2. STAGING AREAS ARE TO BE WITHIN THE WORK LIMITS SHOWN ON THE PLANS.

CONSTRUCTION ACCESS NOTES

AREA 1: FROM JPS TO UPRR:

HWY 96 TO PUEBLO RESERVOIR ACCESS RD TO JUNIPER RD.

AREA 2: FROM UPRR TO MAJOR DRAINAGE NEAR STA S 240+00:

USE HWY 50 TO PURCELL BLVD.

AREA 3: MAJOR DRAINAGE NEAR STA S 250+00 TO HWY 50:

USE HWY 50 TO PURCELL BLVD TO SPAULDING AVE.

AREA 4: PUEBLO WEST AREA:

VARIOUS ACCESS USING ARTERIALS, PLATTEVILLE BLVD, PURCELL BLVD.

AREA 5: REMOTE AREA BETWEEN PUEBLO WEST AND PUEBLO/EL PASO COUNTY LINE:

FOR ACCESS FROM SOUTH USE PLATTEVILLE BLVD AND PUEBLO WEST. FOR ACCESS FROM NORTH USE I-25 MIDWAY EXIT TO INDIAN VILLAGE HEIGHTS TO YOUNG HOLLOW RD

PRELIMINARY

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SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

GENERAL
SOUTH SECTION
PUEBLO COUNTY LOCATION MAP
AND PROJECT SITE INFORMATION

SHEET	3
DWG	G-3
DATE	JULY 2005
PROJ	171473

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-g03.dlv PLOT DATE: 25-JUL-2005 PLOT TIME: 11:22:20

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ABBREVIATIONS

AB	ANCHOR BOLT, AGGREGATE BASE
ABC	AGGREGATE BASE COURSE
ABND	ABANDONED
AC	ASBESTOS CEMENT, ASPHALTIC CONCRETE
ADJ	ADJACENT, ADJUSTABLE
ADPTR	ADAPTER
AGGR	AGGREGATE
AH	AHEAD
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALIGN	ALIGNMENT
AL	ALUMINUM
AMT	AMOUNT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATELY
AQUILA	AQUILA UTILITIES
ASPH	ASPHALT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASWG	AMERICAN STEEL WIRE GAGE
ASSY	ASSEMBLY
@	AT
AUTH	AUTHORIZE
AUTO	AUTOMATIC
AVRV	AIR VACUM RELEASE VALVE
AVE	AVENUE
AVG	AVERAGE
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGIN CURVE
BCR	BEGIN CURVE RETURN
BETW	BETWEEN
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BITUM	BITUMINOUS
BK	BACK
BL	BORING LOCATION
BLACK HILLS	BLACK HILLS CORPORATION
BLDG	BUILDING
BLM	BUREAU OF LAND MANAGEMENT
BLVD, BD	BOULEVARD
BM	BENCH MARK, BEAM
BNSFRR	BURLINGTON NORTHERN & SANTA FE RAILROAD
BO	BLOW OFF
BOT	BOTTOM
BRG	BEARING
BV	BALL VALVE
BW	BOTH WAYS
C ESMT	CONSTRUCTION EASEMENT
C&G	CURB AND GUTTER
CATH	CATHODIC
CARV	COMBINATION AIR RELEASE VALVE
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CDF	CONTROL DENSITY FILL
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CEM	CEMENT
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CIG	COLORADO INTERSTATE GAS
CIP	CAST IRON PIPE
CL	CENTERLINE
CLASS	CLASSIFICATION
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CML&C	CEMENT MORTAR LINED & COATED
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COMB	COMBINATION
CONC	CONCRETE
CONN	CONNECTING
CONSTR	CONSTRUCT
CONT	CONTINUED/CONTINUATION
COORD	COORDINATE
CORP	CORPORATION
CPLG	COUPLING
CPP	CORRUGATED PLASTIC PIPE
CR	COUNTY ROAD
CSG	CASING
CT	COURT
CTR	CENTER
CU	CUBIC
CULV	CULVERT

D	STORM DRAIN, DIAMETER
DC	DEDICATED CORRIDOR
DET	DETAIL
DEV	DEVELOPMENT
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DIST	DISTANCE
DR	DRAIN, DRIVE
DWG	DRAWING
E	EAST,ELECTRIC
EA	EACH
ECC	ECCENTRIC
ECR	END CURB RETURN
EL	ELEVATION
ELB,ELL	ELBOW
EMBED	EMBEDDED
ENGR	ENGINEER
EOP	EDGE OF PAVEMENT
EQ	EQUATION
EQL	EQUAL
EQPT	EQUIPMENT
ESMT	EASEMENT
EW	EACH WAY
EWEF	EACH WAY EACH FACE
EXC	EXCAVATE
EXP	EXPOSED, EXPANSION
EXST, EX	EXISTING
EY	EXPRESSWAY
FBO	FURNISHED BY OTHERS
FC	FLEXIBLE COUPLING, FORT COLLINS
FCA	FLEXIBLE COUPLING ADAPTER
FE	FIELD EXPLORATION
FG	FINISH GRADE
FHY	FIRE HYDRANT
FL	FLOWLINE
FLEX	FLEXIBLE
FLG	FLANGE, FLANGED
FLL,FL	FLOW LINE
FO	FIBER OPTIC
FOT	FLAT ON TOP
FPT	FEMALE PIPE THREAD
FRP	FIBERGLASS REINFORCED PLASTIC
FPS	FOOT PER SECOND
FT	FOOT, FEET
FTG	FOOTING
FUT	FUTURE
FVA	FOUNTAIN VALLEY AUTHORITY
FW	FINISHED WATER LINE
G	GAS MAIN
GA	GAGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GND,GRND	GROUND
GS	GAS SERVICE LINE
GV	GATE VALVE
GVL	GRAVEL
HBP	HOT BITUMINOUS PAVING
HCL	HORIZONTAL CONTROL LINE
HDR	HEADER
HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE
HG	HYDRAULIC GRADIENT
HGL	HYDRAULIC GRADE LINE
HGT	HEIGHT
HI	HIGH
HORIZ	HORIZONTAL
HP	HIGH POINT, HIGH PRESSURE
HTS	HEIGHTS
HWY	HIGHWAY
HYD	HYDRANT
ID	INSIDE DIAMETER
I.E.	INVERT ELEVATION
IN.	INCH
INV	INVERT
IP	IRON PIPE
IRR	IRRIGATION

JT	JOINT
JPS	JUNIPER PUMP STATION
L	LEFT, ANGLE, LENGTH
LAT'L	LATERAL
LF	LINEAR FEET
LG	LENGTH
LN	LANE
LP	LOW POINT, LIQUID PETROLEUM PIPELINE
L-R	LEFT TO RIGHT
LT	LEFT
MATL	MATERIAL
MAX	MAXIMUM
MGD	MILLION GALLONS PER DAY
MTP	MAIN TRANSMISSION PIPELINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MON	MONUMENT
MTR	METER
MVEA	MOUNTAIN VIEW ELECTRIC ASSOCIATION
N	NORTH
NA	NOT APPLICABLE
NACE	NATIONAL ASSOCIATION OF CORROSION ENGINEERS
NB	NORTH BOUND
NIC	NOT IN CONTRACT
NO.,#	NUMBER, NUMBERING
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
O&M	OPERATION & MAINTENANCE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OG	ORIGINAL GROUND
OH	OVERHEAD
OHE	OVERHEAD ELECTRIC
OPNG	OPENING
ORIG	ORIGINAL
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
PE, P/E	PERMANENT EASEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PERM	PERMANENT
PH	POTHOLE LOCATION
PI	POINT OF INTERSECTION
PL	PROPERTY LINE, PLATE, PLACE
POB	POINT OF BEGINNING
POC	POINT ON CURVE
POE	POINT OF END
PP	POWER POLE, PLAN AND PROFILE
PPIR	PIKES PEAK INTERNATIONAL RACEWAY
PRC	POINT OF REVERSE CURVE
PREFAB	PREFABRICATED
PRO	PROPOSED
PS	PUMP STATION
PSCO	PUBLIC SERVICE COMPANY COLORADO
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAGE
PT	POINT OF TANGENCY
PVMT	PAVEMENT
PVC	POLYVINYL CHLORIDE
PW	PUEBLO WEST METROPOLITAN DISTRICT
R,RAD	RADIUS
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRET PIPE ARCH
RD	ROAD, RECORD DRAWING
RDCR	REDUCER
REINF	REINFORCE
REF	REFER, REFERENCE
REM	REMOVED
REQD	REQUIRED
RH	RODHOLE
RP	RADIUS POINT
RR	RAILROAD
RT	RIGHT
R/W,ROW	RIGHT-OF-WAY
RW	RAW WATER

S	SOUTH, SLOPE
SAN,S	SANITARY SEWER MAIN
SB	SOUTH BOUND
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN
SDS	SOUTHERN DELIVERY SYSTEM
SDSP	SOUTHERN DELIVERY SYSTEM PIPELINE
SE	SEWAGE EFFLUENT
SERV	SERVICE
SH	SHEET
SHTS	SHEETS
SIG	SIGNAL
SIM	SIMILAR
SLP	SLOPE
SPEC	SPECIFICATIONS
SPRR	SOUTHERN PACIFIC RAILROAD
SS	SANITARY SEWER
SST,SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURE
SUB	ELECTRICAL SUB STATION
SYMM	SYMMETRICAL
Tt	TANGENT, TELEPHONE, THICKNESS
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TEL	TELEPHONE
TEMP	TEMPORARY
TO	TOP OF
TOP	TOP OF PIPE
TOPO	TOPOGRAPHY
TP	TEST PIT
TRANS	TRANSITION
TRISTATE	TRI-STATE GENERATION & TRANSMISSION ASSOCIATION, INC.
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UGT	UNDERGROUND TELEPHONE
UNO	UNLESS NOTED OTHERWISE
UPRR	UNION PACIFIC RAILROAD
UT	ULTRASONIC TESTING
V	VALVE, VENT
VB	VERTICAL BEND
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VPI	VERTICAL POINT OF INTERSECTION
VV	VACUUM VALVE
VW	VIEW
W	WATER,WEST
W/	WITH
WCPS	WILLIAMS CREEK PUMP STATION
WL	WORK LIMITS
WM	WATER METER
WS	WATER SURFACE, WATER STOP, WATER SERVICE
WSP	WELDED STEEL PIPE
W/O	WITHOUT
WSEL	WATER SURFACE ELEVATION
WT	WEIGHT
WTP	WATER TREATMENT PLANT
XCEL	XCEL ENERGY

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APVD		NO.	DATE	REVISION	BY	APVD	

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Colorado Springs, CO 80903

SDS Southern Delivery System

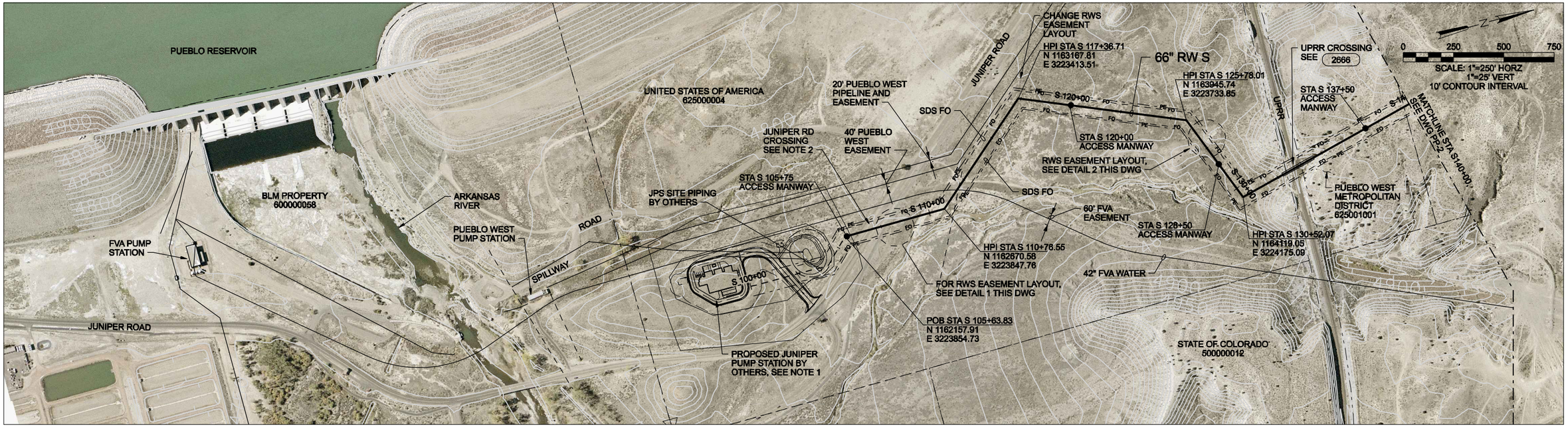
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

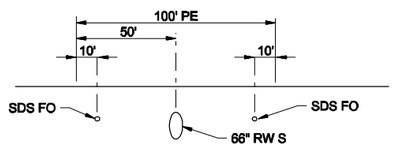
GENERAL

ABBREVIATIONS

SHEET	5
DWG	G-5
DATE	JULY 2005
PROJ	171473

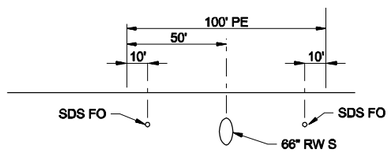
CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-g04.dlv PLOT DATE: 27-JUL-2005 PLOT TIME: 10:03:18





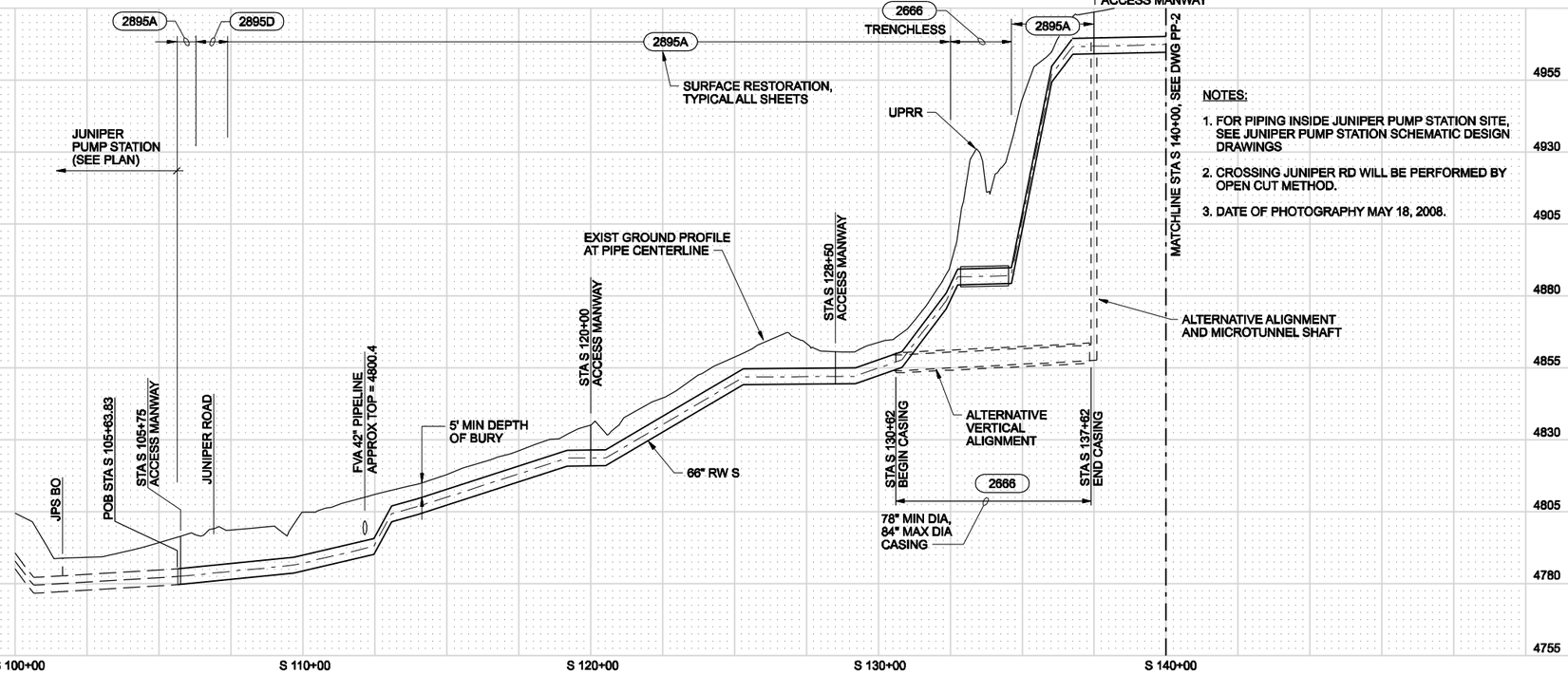
RWS EASEMENT LAYOUT DETAIL 1

APPROX STA S 105+63 TO APPROX STA S 117+36



RWS EASEMENT LAYOUT DETAIL 2

APPROX STA S 117+36 TO STA S 211+18



NOTES:

1. FOR PIPING INSIDE JUNIPER PUMP STATION SITE, SEE JUNIPER PUMP STATION SCHEMATIC DESIGN DRAWINGS
2. CROSSING JUNIPER RD WILL BE PERFORMED BY OPEN CUT METHOD.
3. DATE OF PHOTOGRAPHY MAY 18, 2008.

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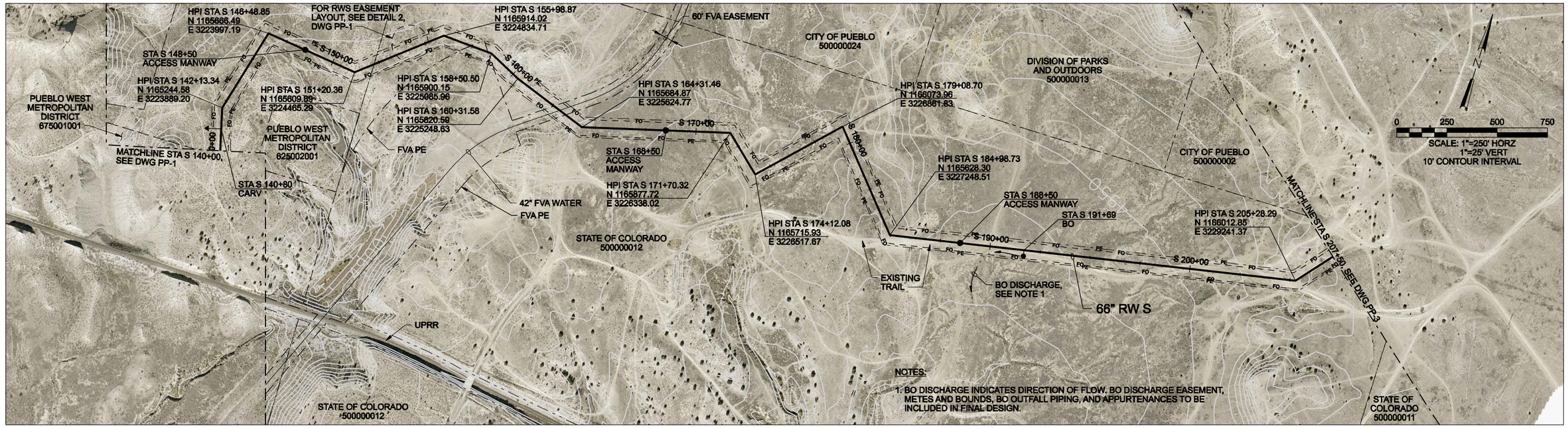
SDS Southern Delivery System

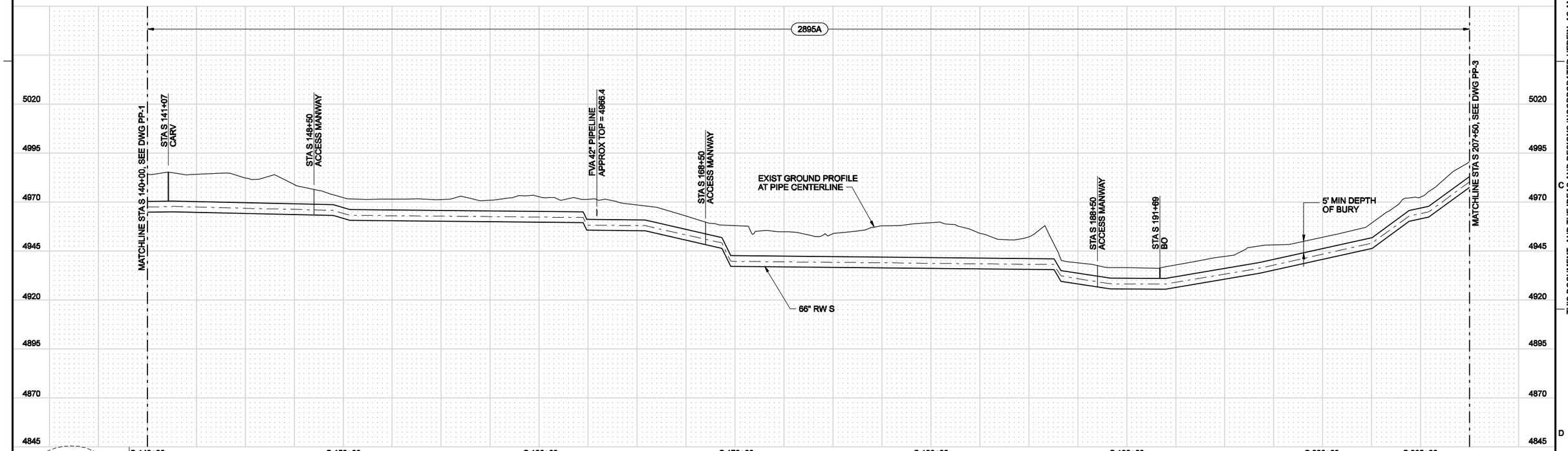
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
POB STA S 105+63.83 TO STA S 140+00
PLAN AND PROFILE

SHEET	13
DWG	PP-1
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp01.dlv PLOT DATE: 09-AUG-2005 PLOT TIME: 13:01:58





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APVD APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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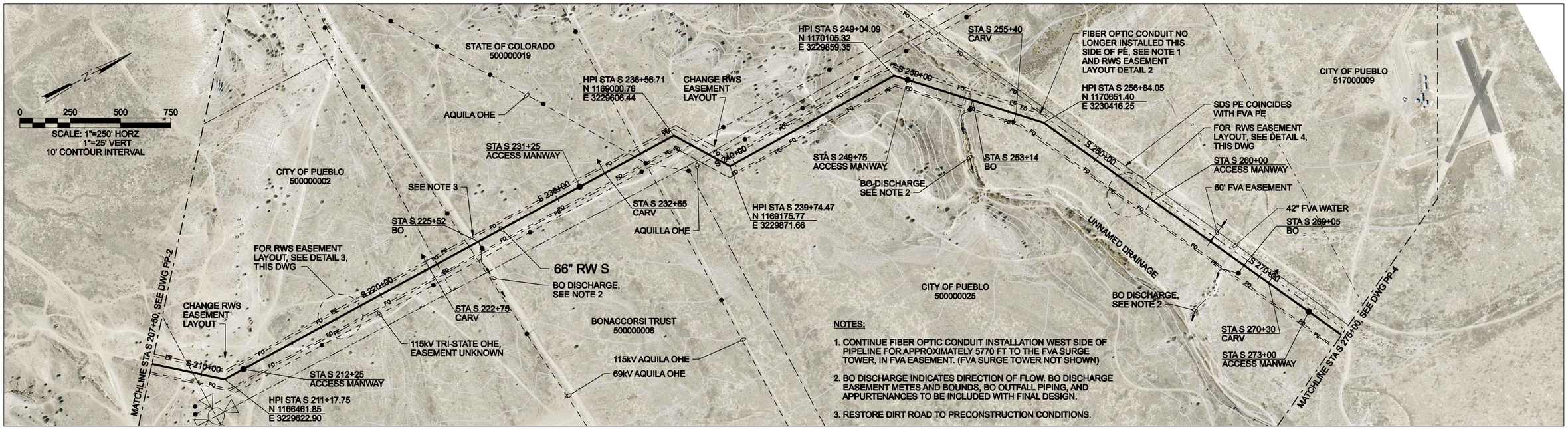
SDS Southern Delivery System

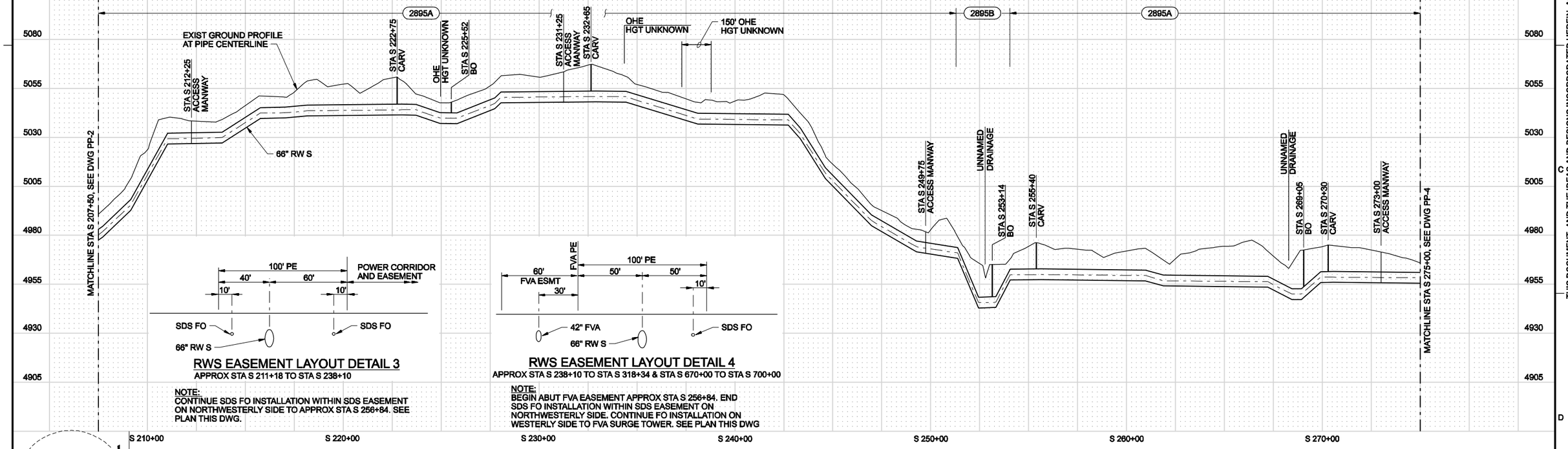
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 140+00 TO STA S 207+50
PLAN AND PROFILE

SHEET	14
DWG	PP-2
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp02.dlv PLOT DATE: 09-AUG-2005 PLOT TIME: 12:22:27





RWS EASEMENT LAYOUT DETAIL 3

APPROX STA S 211+18 TO STA S 238+10

NOTE:
CONTINUE SDS FO INSTALLATION WITHIN SDS EASEMENT ON NORTHWESTERLY SIDE TO APPROX STA S 256+84. SEE PLAN THIS DWG.

RWS EASEMENT LAYOUT DETAIL 4

APPROX STA S 238+10 TO STA S 318+34 & STA S 670+00 TO STA S 700+00

NOTE:
BEGIN ABUT FVA EASEMENT APPROX STA S 256+84. END SDS FO INSTALLATION WITHIN SDS EASEMENT ON NORTHWESTERLY SIDE. CONTINUE FO INSTALLATION ON WESTERLY SIDE TO FVA SURGE TOWER. SEE PLAN THIS DWG

PRELIMINARY

DSGN	S BEESON						VERIFY SCALE
DR	B NORVILLE						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 207+50 TO STA S 275+00
PLAN AND PROFILE

SHEET	15
DWG	PP-3
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp03.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 06:59:46

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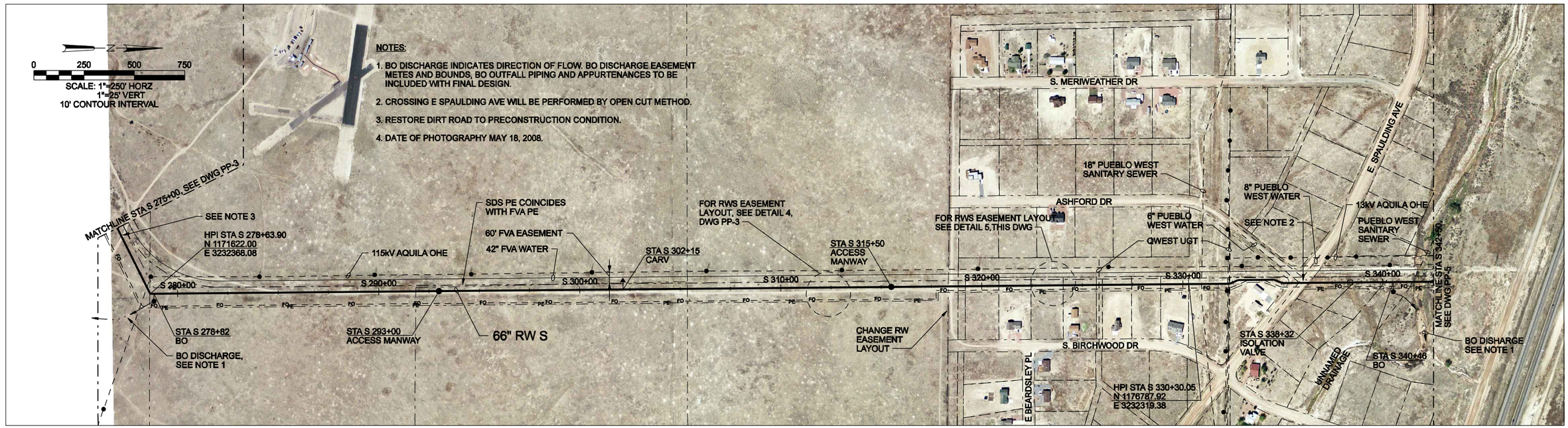

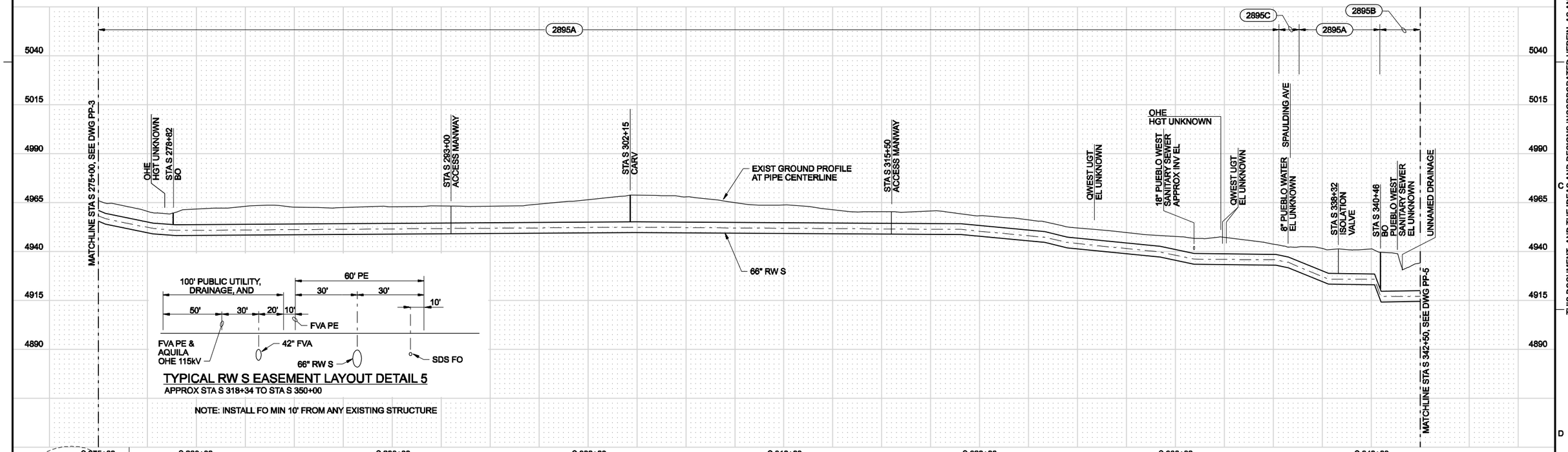

TYPICAL RW S EASEMENT LAYOUT DETAIL 5

APPROX STA S 318+34 TO STA S 350+00

NOTE: INSTALL FO MIN 10' FROM ANY EXISTING STRUCTURE

PRELIMINARY

DSGN	S BEESON						VERIFY SCALE
DR	B NORVILLE						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL

STA S 275+00 TO STA S 342+50 PLAN AND PROFILE

SHEET	16
DWG	PP-4
DATE	AUG 2008
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp04.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:01:25

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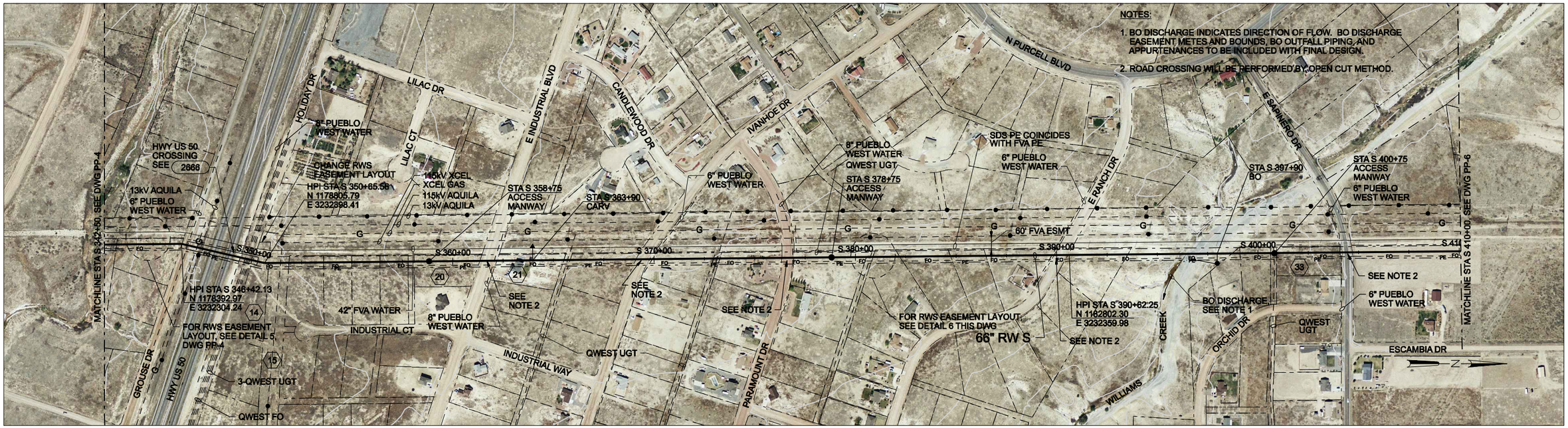

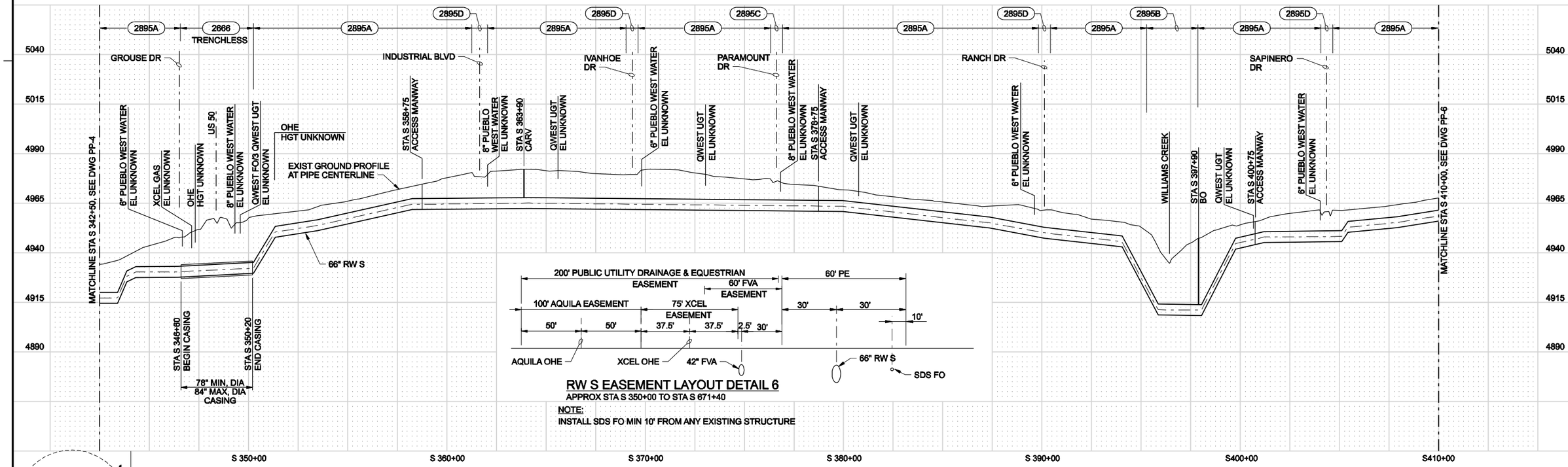

RW S EASEMENT LAYOUT DETAIL 6

APPROX STA S 350+00 TO STA S 671+40

NOTE:
INSTALL SDS FO MIN 10' FROM ANY EXISTING STRUCTURE

PRELIMINARY

DSGN	S BEESON						VERIFY SCALE
DR	B NORVILLE						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 342+50 TO STA S 410+00
PLAN AND PROFILE

SHEET	17
DWG	PP-5
DATE	AUG 2008
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp05.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:12:05

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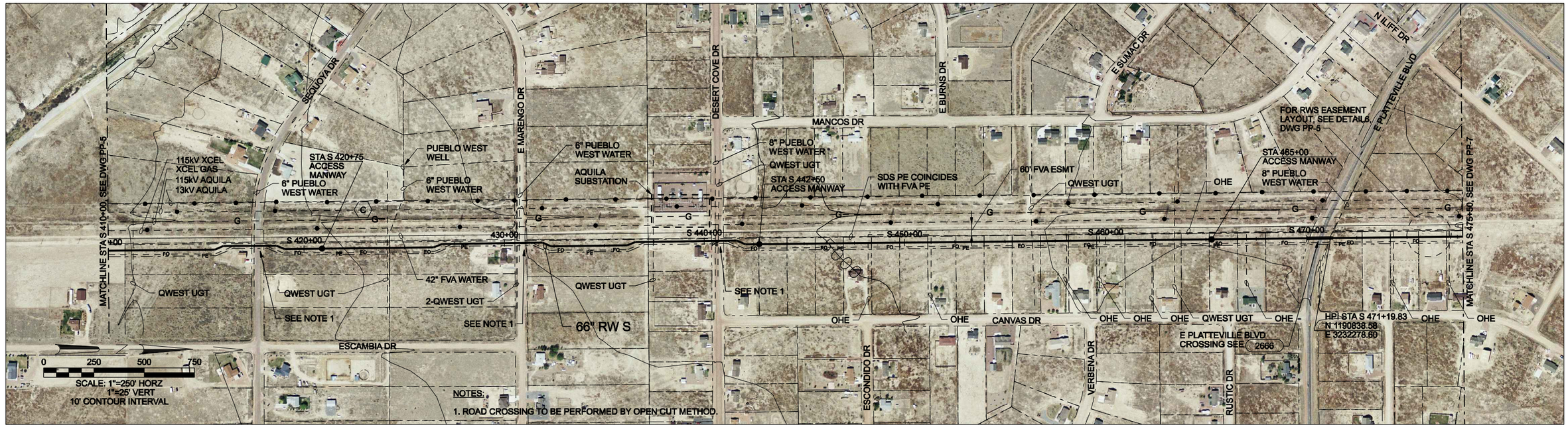

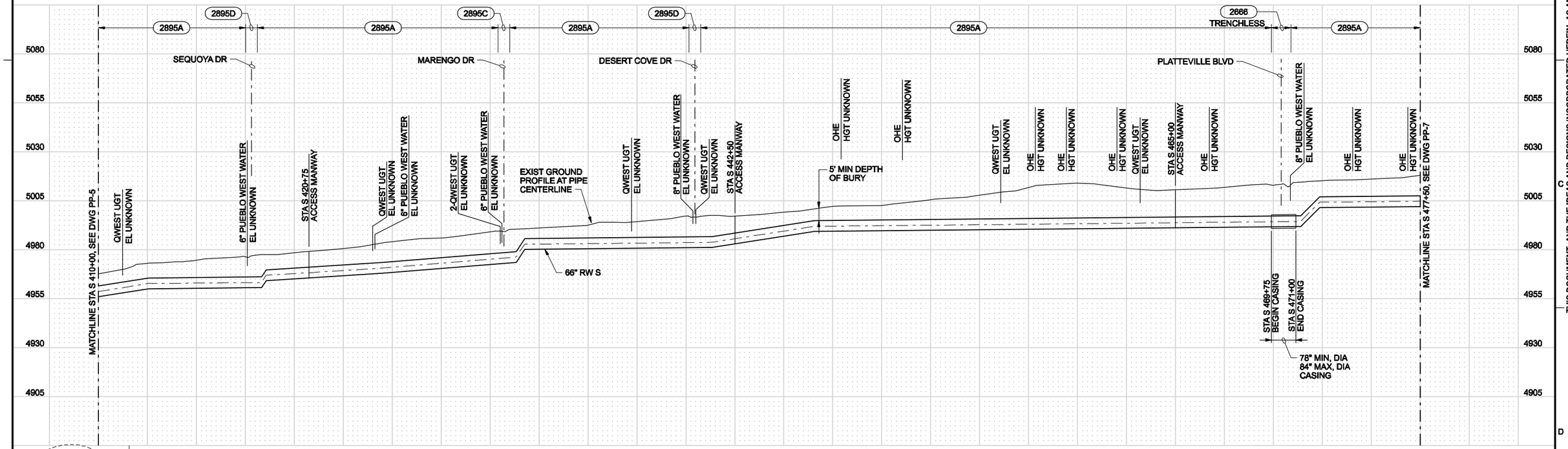

PRELIMINARY

DSGN	S BEESON						VERIFY SCALE
DR	B NORVILLE						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 410+00 TO STA S 477+50
PLAN AND PROFILE

SHEET	18
DWG	PP-6
DATE	AUG 2008
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp06.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:14:26

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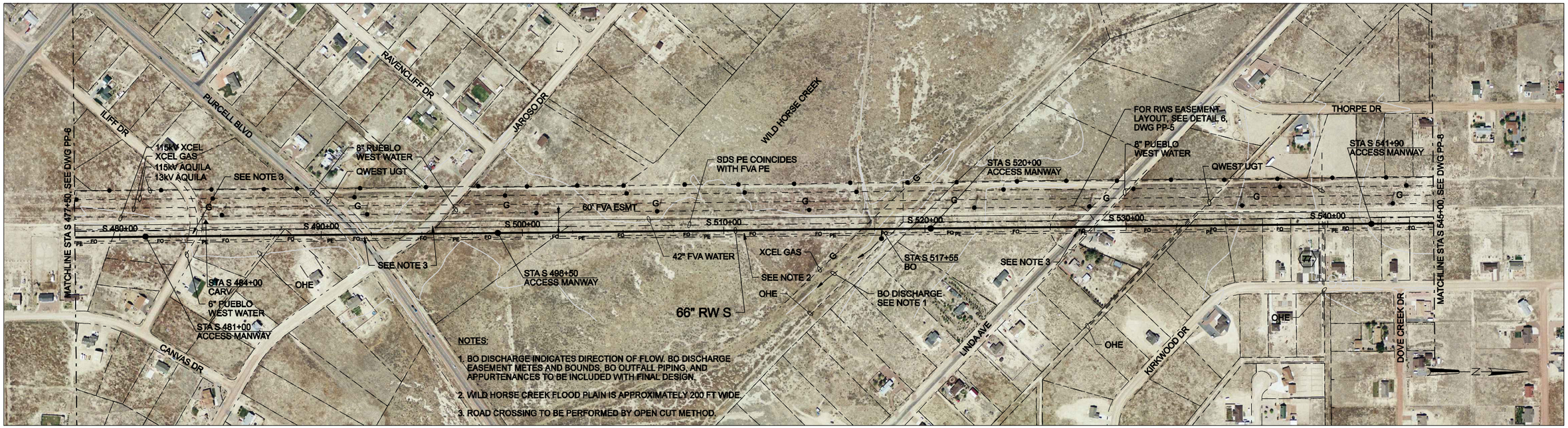

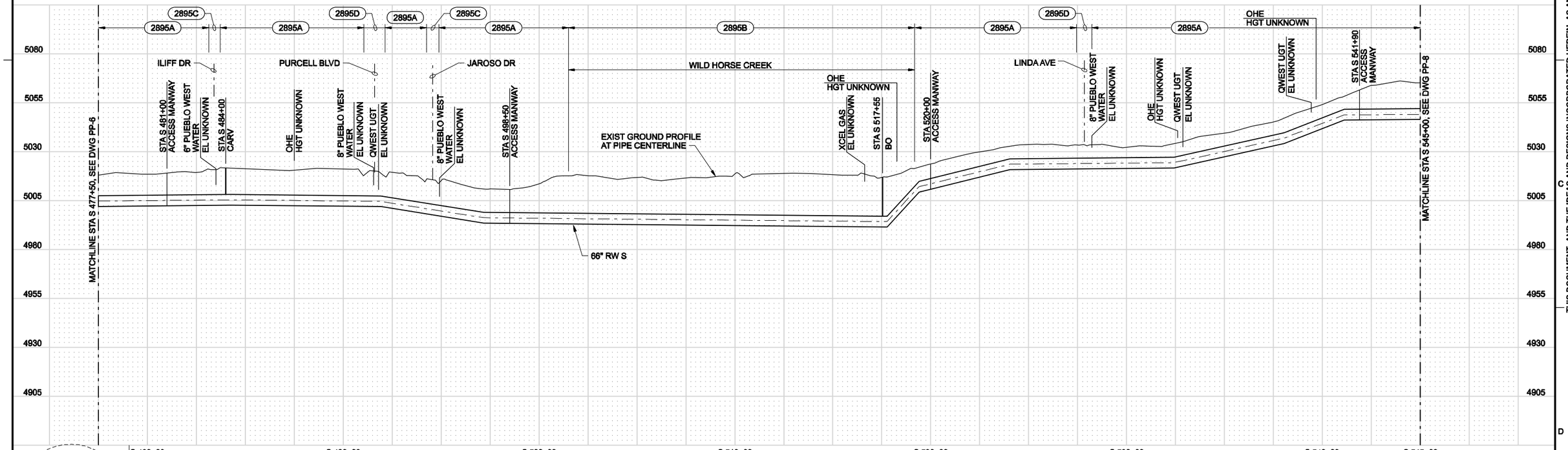

PRELIMINARY

DSGN	S BEESON					
DR	B NORVILLE					
CHK	CHECKED-BY					
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD

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0 1"

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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 477+50 TO STA S 545+00
PLAN AND PROFILE

SHEET	19
DWG	PP-7
DATE	AUG 2008
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp07.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:16:09

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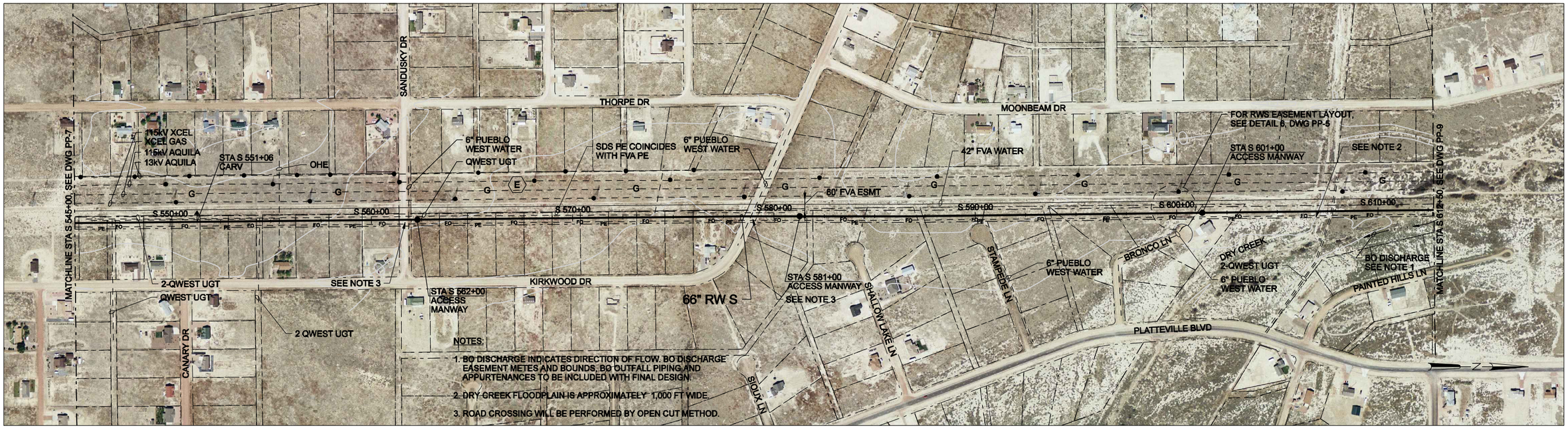

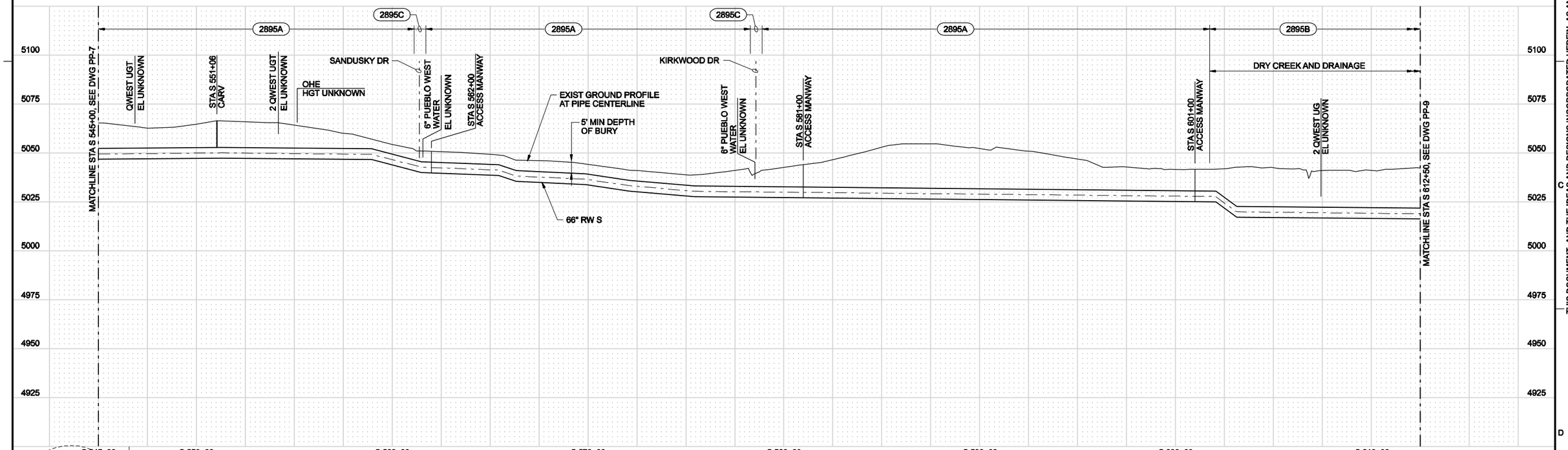

PRELIMINARY

DSGN	S BEESON						
DR	B NORVILLE						
CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 545+00 TO STA S 612+50
PLAN AND PROFILE

SHEET	20
DWG	PP-8
DATE	AUG 2008
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp08.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:17:24

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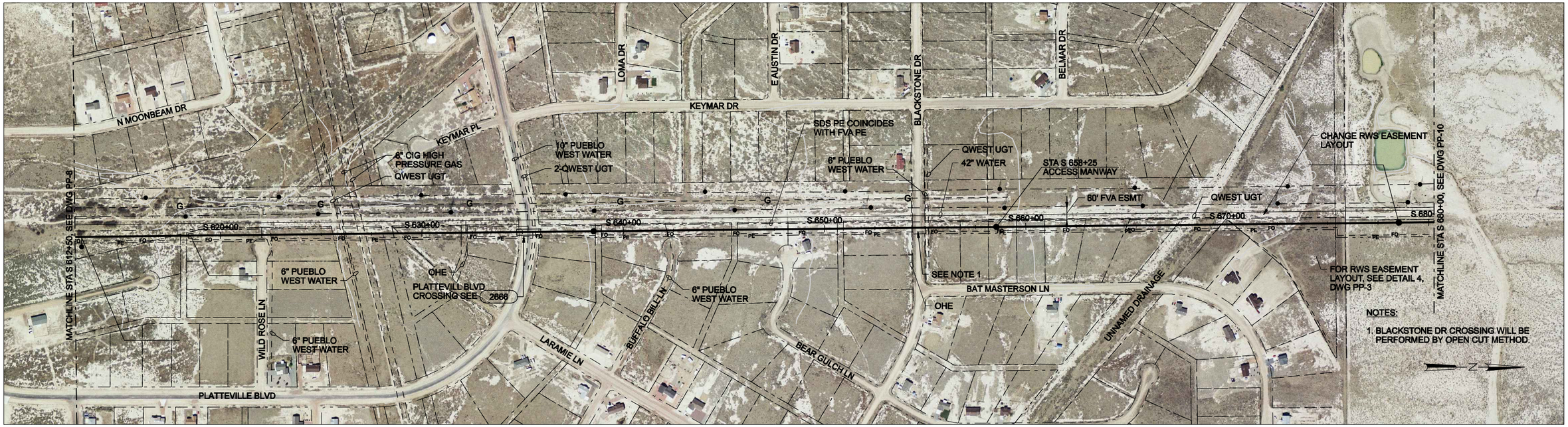

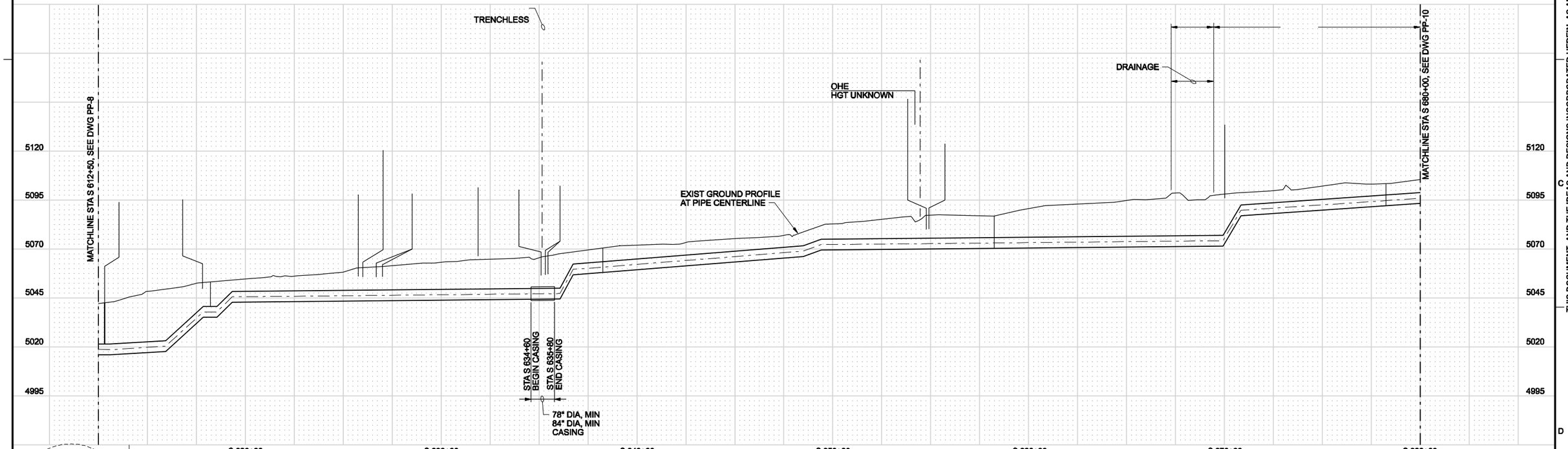

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APVD APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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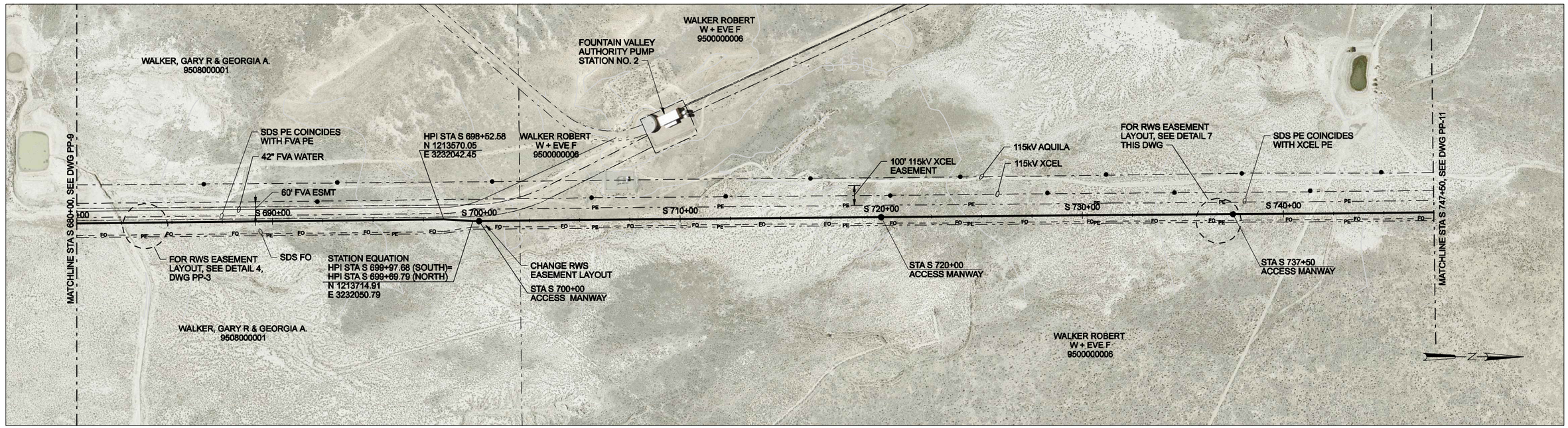
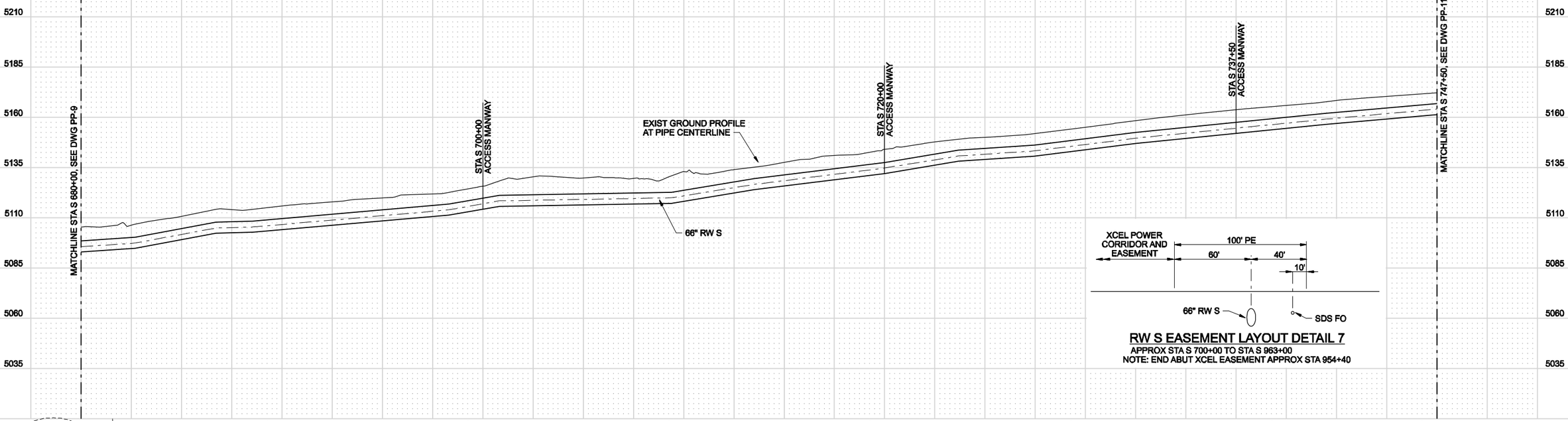
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 612+50 TO STA S 680+00
PLAN AND PLOT

SHEET	21
DWG	PP-9
DATE	AUG 2008
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp09.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:19:00





XCEL POWER CORRIDOR AND EASEMENT

RW S EASEMENT LAYOUT DETAIL 7

APPROX STA S 700+00 TO STA S 963+00
NOTE: END ABUT XCEL EASEMENT APPROX STA 954+40

PRELIMINARY

DSGN	S BEESON						
DR	B.NORVILLE						
CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 680+00 TO STA S 747+50
PLAN AND PROFILE

SHEET	22
DWG	PP-10
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp10.dlv PLOT DATE: 11-MAR-2008 PLOT TIME: 14:06:45

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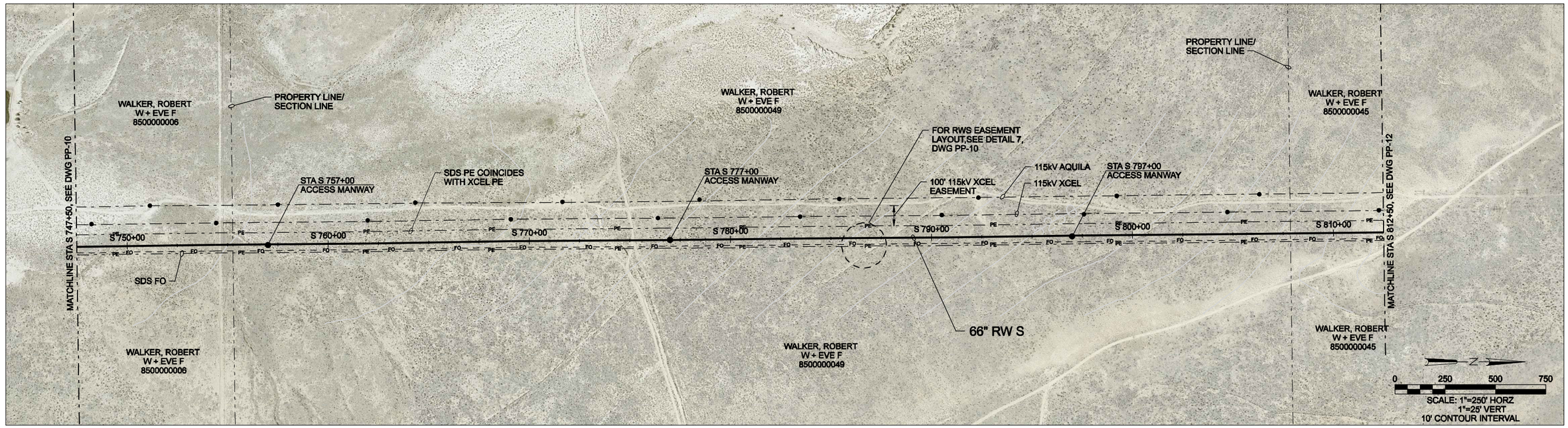

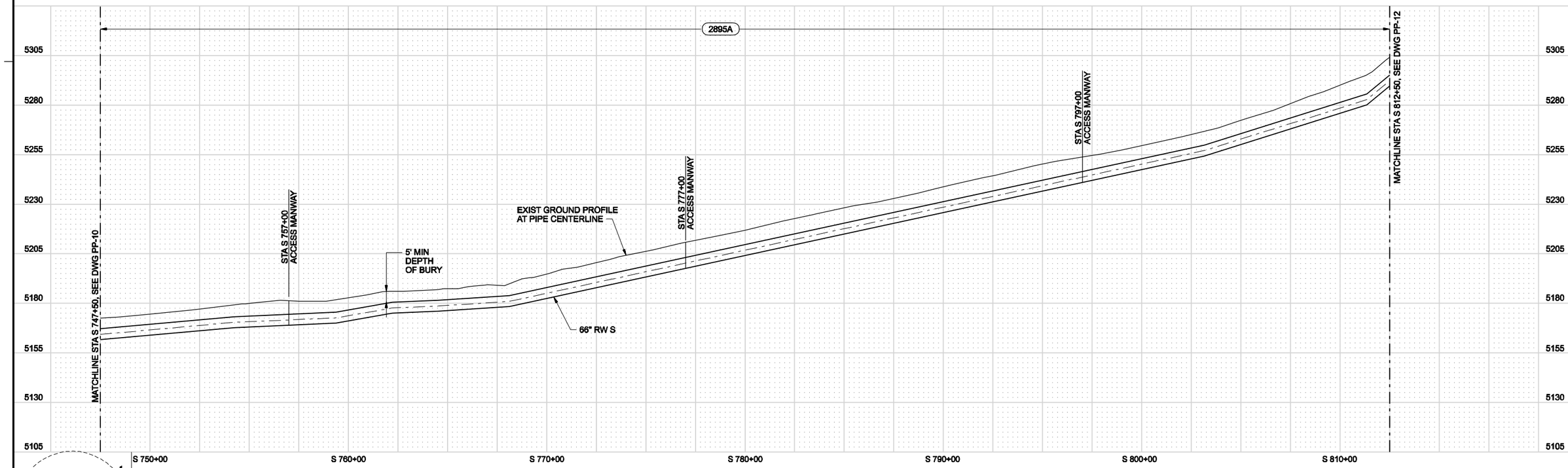

PRELIMINARY

DSGN	J EDRICH						VERIFY SCALE
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CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 747+50 TO STA S 812+50
PLAN AND PROFILE

SHEET	23
DWG	PP-11
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp11.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:25:31

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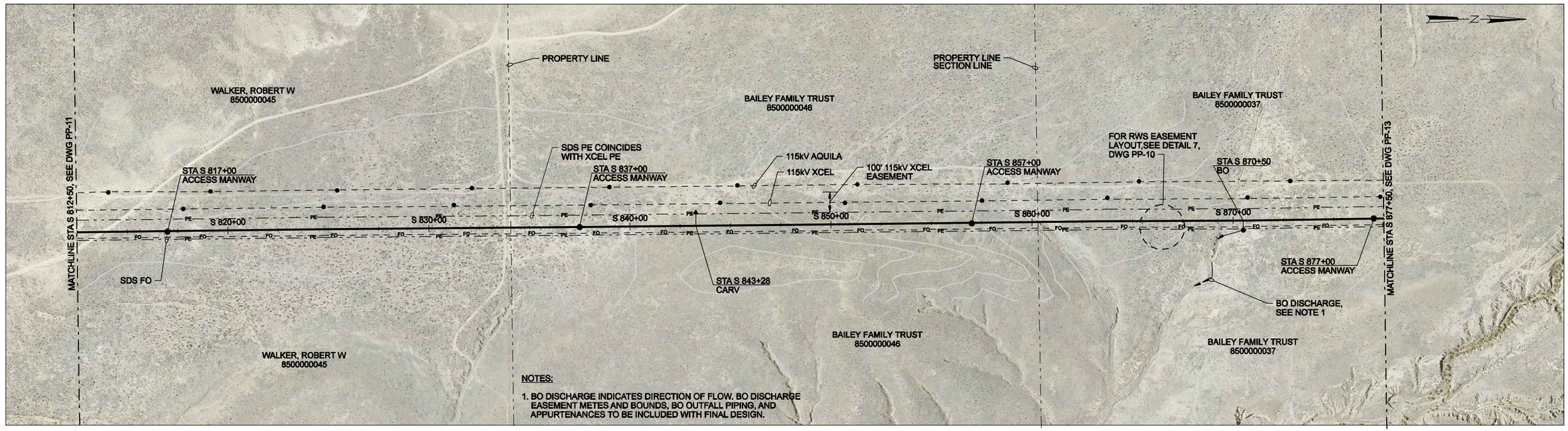
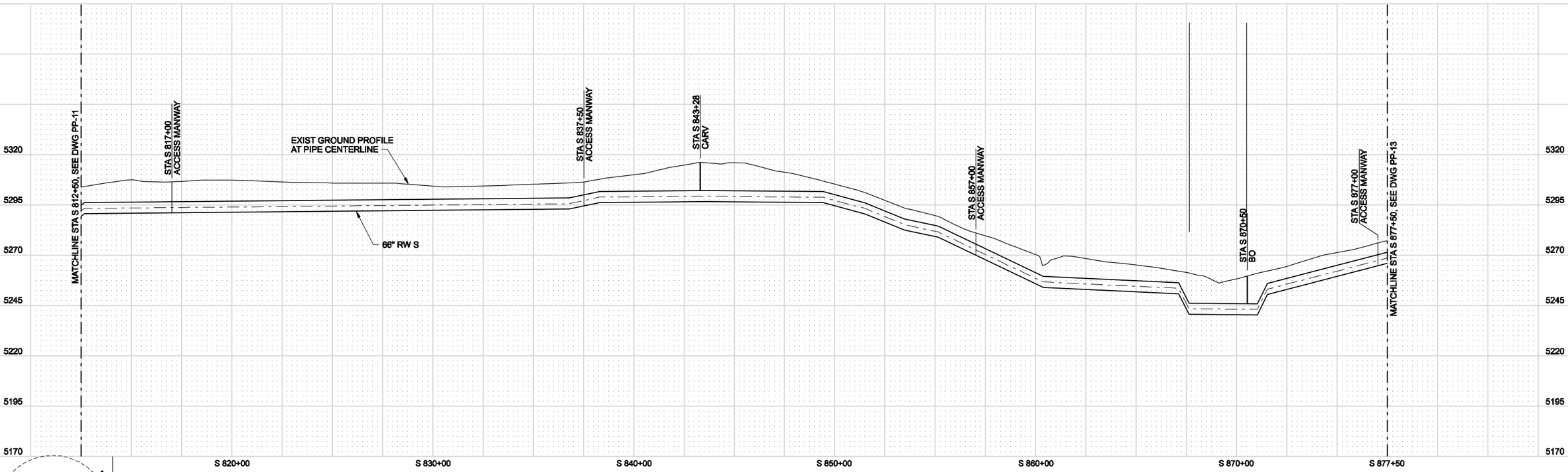


NOTES:

1. BO DISCHARGE INDICATES DIRECTION OF FLOW. BO DISCHARGE EASEMENT METES AND BOUNDS, BO OUTFALL PIPING, AND APPURTENANCES TO BE INCLUDED WITH FINAL DESIGN.



PRELIMINARY

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APVD APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 812+50 TO STA S 877+50
PLAN AND PROFILE

SHEET	24
DWG	PP-12
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp12.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:27:42

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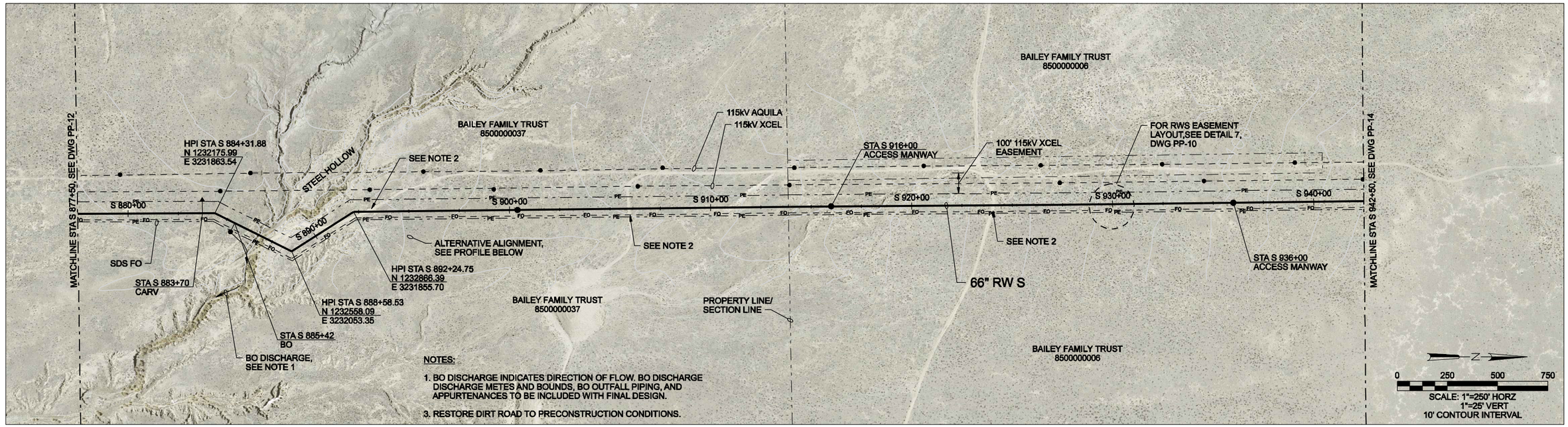

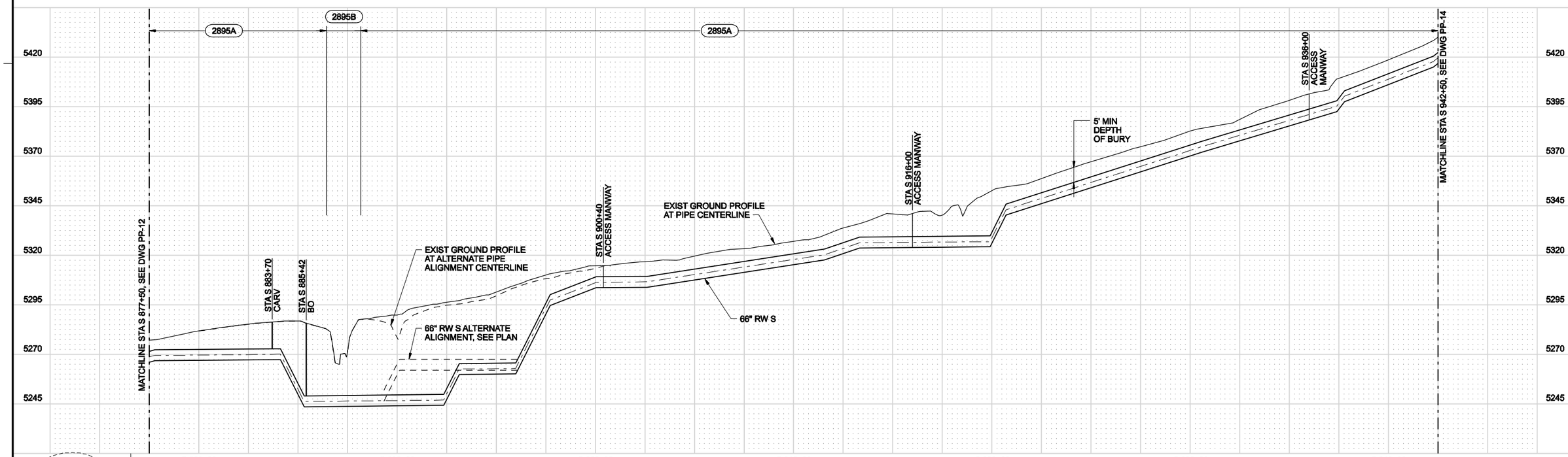

PRELIMINARY

DSGN	J EDRICH						VERIFY SCALE
DR	B NORVILLE						BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 877+50 TO STA S 942+50
PLAN AND PROFILE

SHEET	25
DWG	PP-13
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp13.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:28:50

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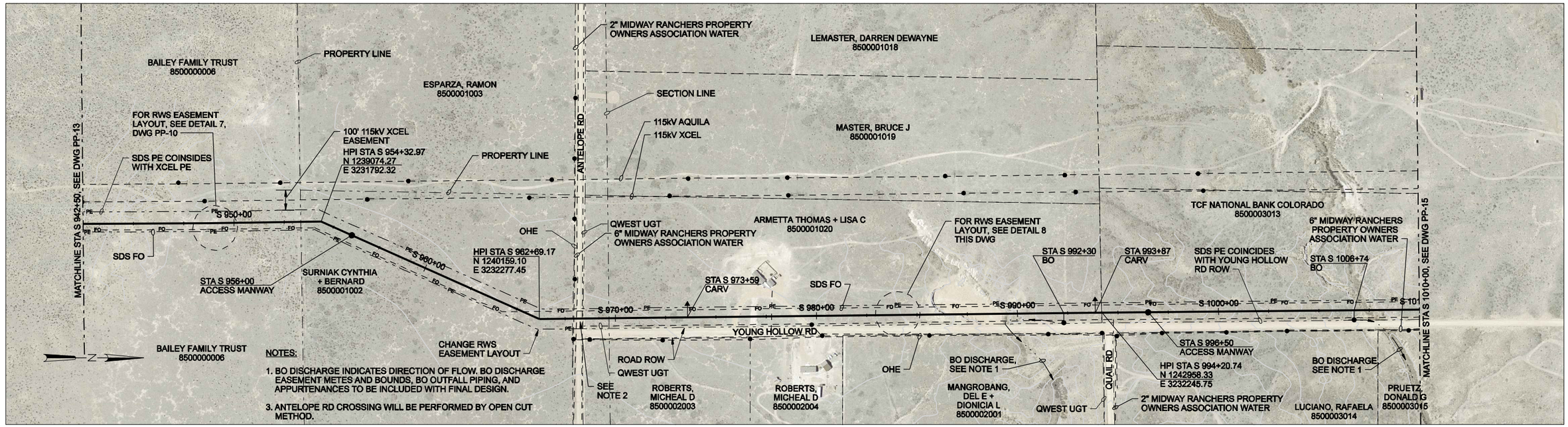

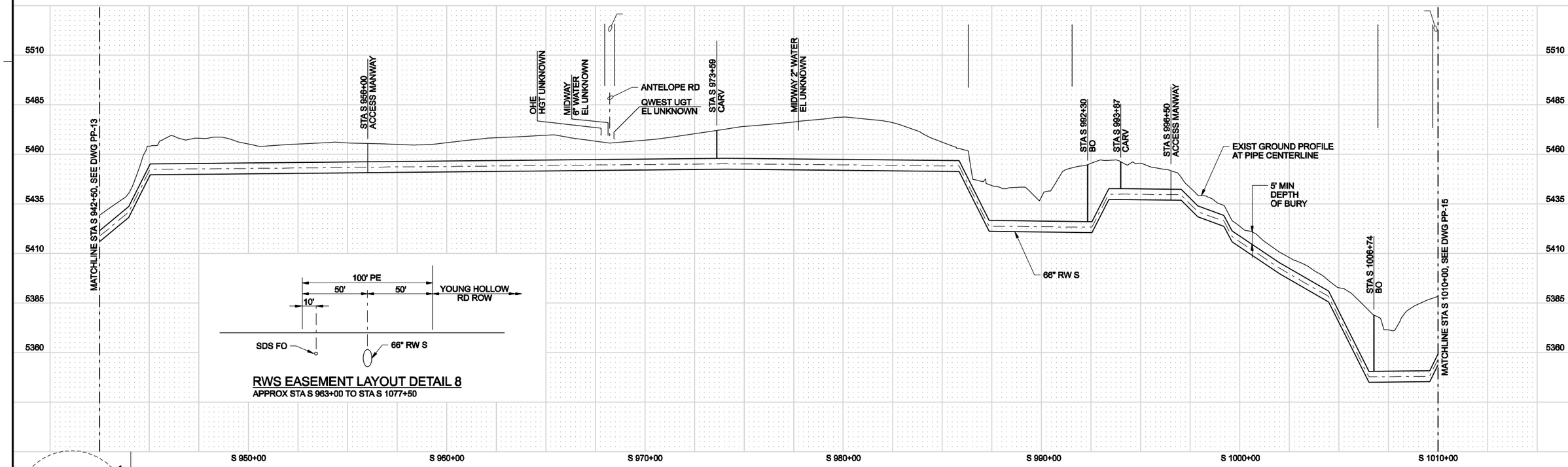

RWS EASEMENT LAYOUT DETAIL 8

APPROX STA S 963+00 TO STA S 1077+50

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SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
SOUTH SECTION SCHEMATIC DESIGN

CIVIL
STA S 942+50 TO STA S 1010+00
PLAN AND PROFILE

SHEET	26
DWG	PP-14
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp14.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:31:54

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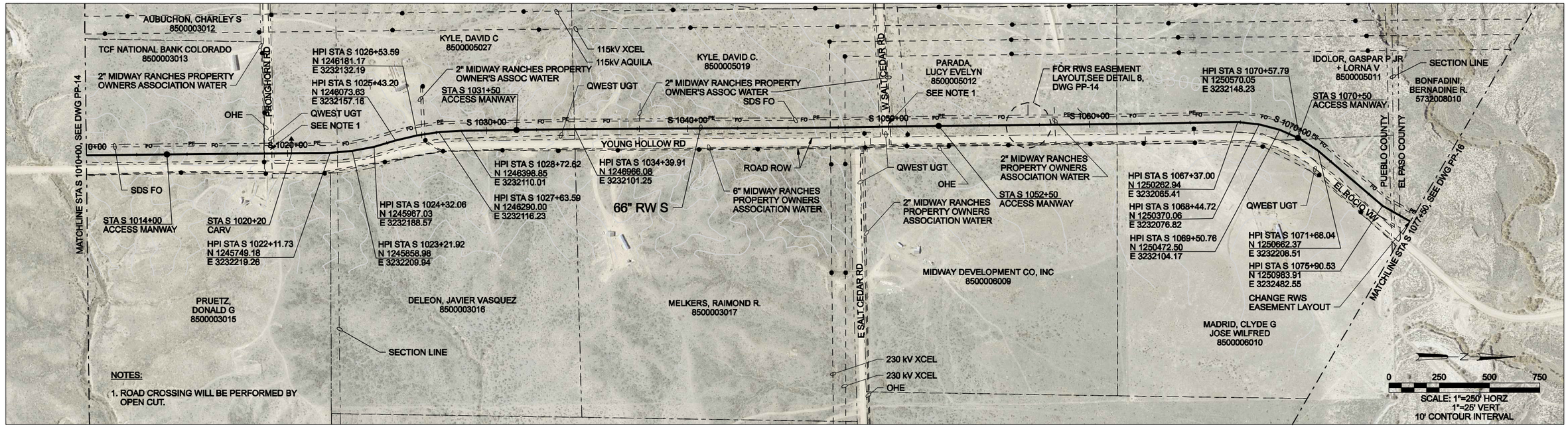

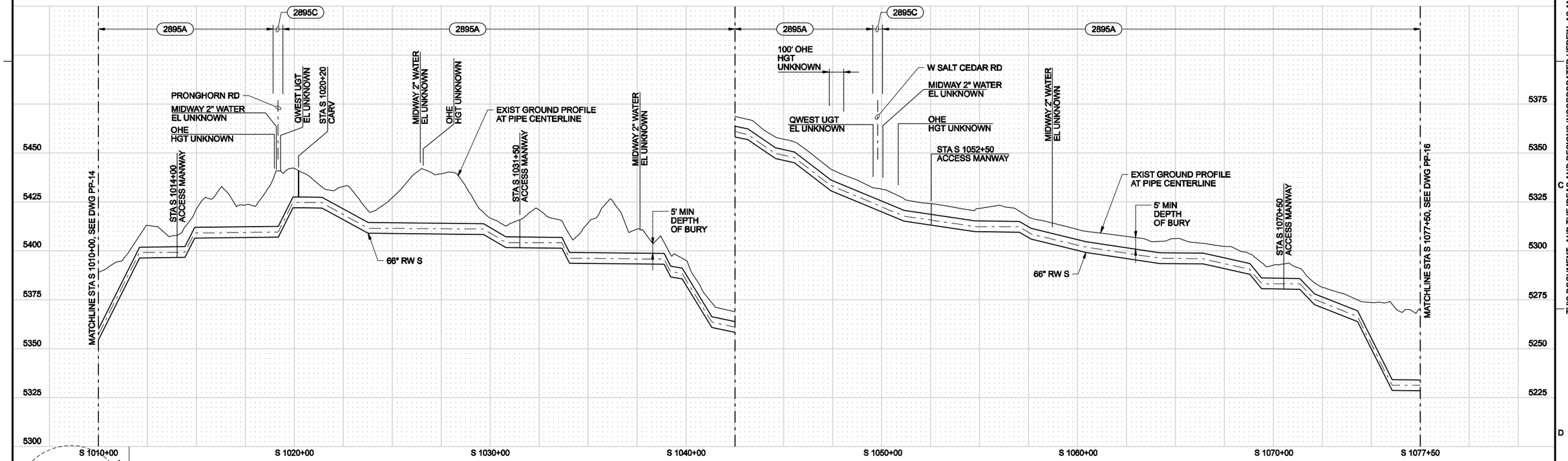

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SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
RAW WATERPIPELINE
SOUTH SECTION GN

CIVIL
STA S 1010+00 TO STA S 1077+50
PLAN AND PROFILE

SHEET	27
DWG	PP-15
DATE	JULY 2005
PROJ	171473.SP

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: south-pp15.dlv PLOT DATE: 04-AUG-2005 PLOT TIME: 07:43:03

Appendix B.2
Juniper Pump Station

SDS
Southern Delivery System

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE
NORTH SECTION ONE

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MAY 2005

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END OF SECTION

SCHEMATIC DESIGN SUBMITTAL
DOCUMENTS FOR THE CONSTRUCTION OF THE

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

NOT FOR CONSTRUCTION

Colorado Springs Utilities
It's how we're all connected

City of Fountain
Pure Colorado

Security Water and Sanitation Districts

VOLUME 3 OF 3
DRAWINGS

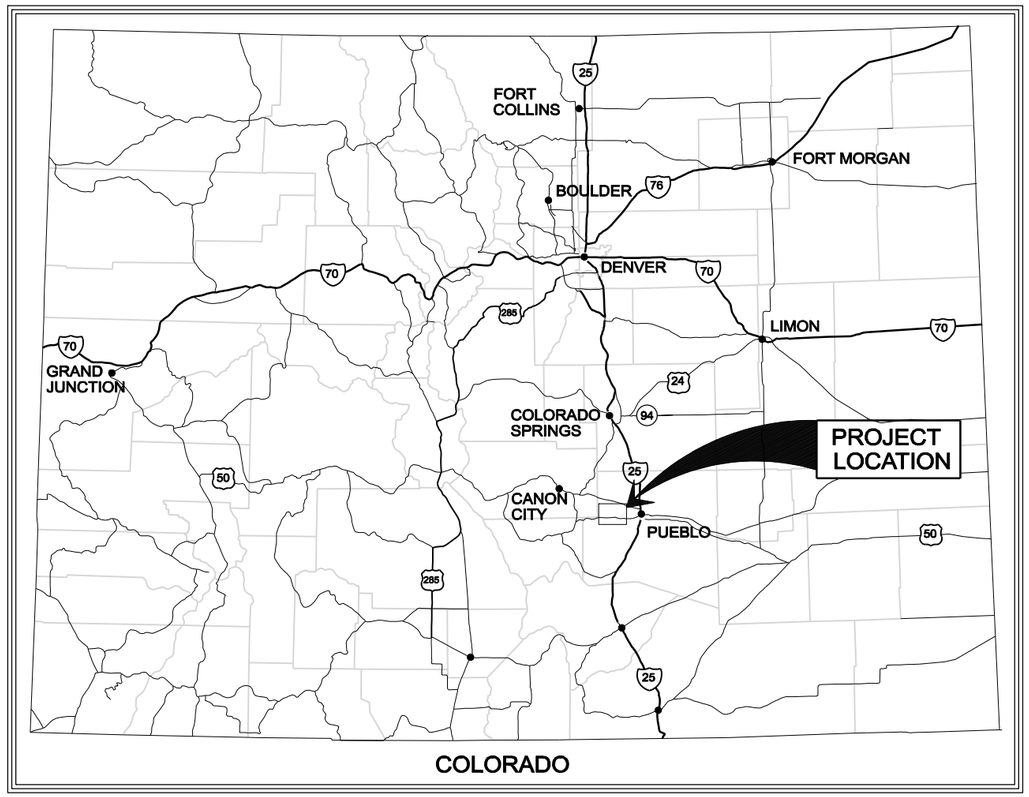
FEBRUARY 2006

CH2MHILL
Colorado Springs, CO 80903

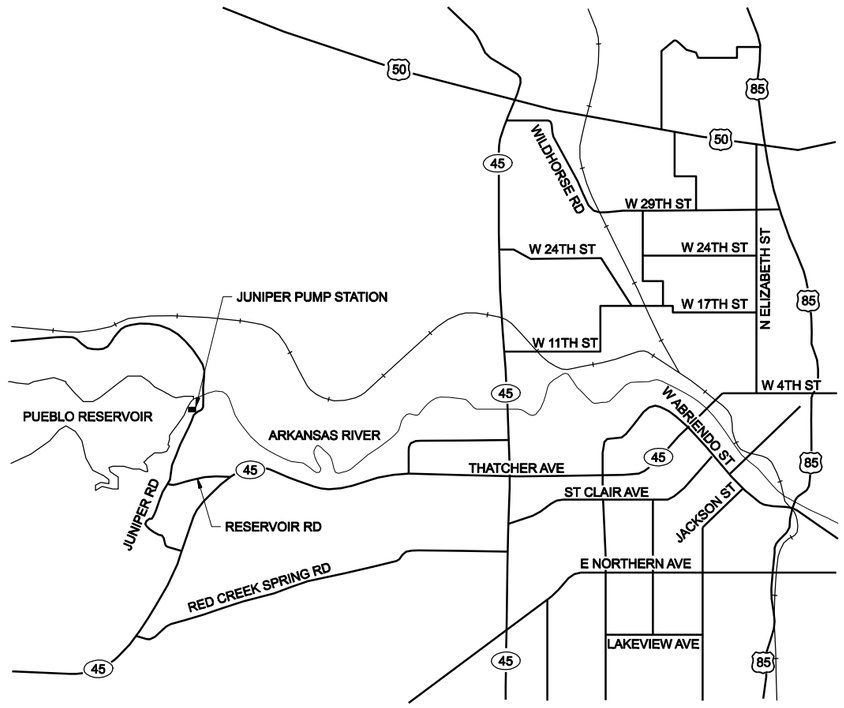
OWNER'S REPRESENTATIVE:
RUSSEL NICKLIN
COLORADO SPRINGS UTILITIES
COLORADO SPRINGS, CO
PHONE: (719)-668-9401

DESIGN BUILDER'S REPRESENTATIVE:
BRUCE SPILLER, P.E.
COLORADO SPRINGS, CO
PHONE: (719)-477-4914

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN01nG001d_171478.dgn PLOT DATE: 8/1/2008 PLOT TIME: 2:04:05 PM



VICINITY MAP
NTS



LOCATION MAP
NTS

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SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

GENERAL
JUNIPER PUMP STATION
LOCATION AND VICINITY MAP

SHEET	SHEET-NO
DWG	JN01-G-02
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN01nG002d_171473.dgn PLOT DATE: 03/02/2006 PLOT TIME: 7:32:52 AM

ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
ABS	ACRYLONITRILE-BUTADIENE-STYRENE
AC	ACTIVATED CARBON OR ASPHALT CONCRETE
A/C	AIR CONDITIONING
ACFM	ACTUAL CUBIC FEET PER MINUTE
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASPHALT CONCRETE PAVEMENT
ACT	ACOUSTIC TILE
ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJACENT OR ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AGG	AGGREGATE
AHP	AIR: HIGH PRESSURE
AHR	ANCHOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM
ALP	AIR: LOW PRESSURE
ALTN	ALTERNATIVE
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
AS	ADJUSTABLE SPEED
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ASSY	ASSEMBLY
ASU	AIR SUPPLY UNIT
AUTO	AUTOMATIC
AUX	AUXILIARY
AVAR	AIR VACUUM AND AIR RELEASE VALVE
AWWA	AMERICAN WATER WORKS ASSOCIATION
AWG	AMERICAN WIRE GAGE
BA	BACKWASH AIR
BC	BEGIN CURVE OR BOLT CIRCLE, BRIDGE CRANE
BD	BOARD
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BFP	BACK FLOW PREVENTER
BLK	BLACK, BLOCK
BLKG	BLOCKING
BLDG	BUILDING
BM	BENCH MARK OR BEAM
BO	BLOW OFF ASSEMBLY OR BOTTOM OF
BOD	BIOCHEMICAL OXYGEN DEMAND
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BP	BOOSTER PUMP PIPING
BPV	BACK PRESSURE VALVE
BRG	BEARING
BRK	BREAK
B&S	BELL AND SPIGOT
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BTWN	BETWEEN
BV	BALL VALVE
BVC	BEGINNING OF VERTICAL CURVE
BWF	BACKWASH FILL
BWR	BACKWASH RETURN
BWS	BACKWASH SUPPLY WATER
BWW	BACKWASH WASTEWATER
BWV	BACK WATER VALVE
BYP	BYPASS
C	CHANNEL OR CELSIUS
CAB	CABINET
CAP	CAPACITY
CARV/CAV	COMBINATION AIR RELEASE VALVE
CB	CATCH BASIN
CC	CENTER TO CENTER
CCB	CHLORINE CONTACT BASIN
CCP	CONCRETE CYLINDER PIPE
CCS	CENTRAL CONTROL SYSTEM
CD	CEILING DIFFUSER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHKD PL	CHECKERED PLATE
CI	CAST IRON
CIGC	CAST IRON GROOVED COUPLING
CIMJ	CAST IRON MECHANICAL JOINT
CIP	CAST IRON PIPE
CIRJ	CAST IRON RESTRAINED JOINT
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION OR CONTROL JOINT
CL	CENTERLINE OR CLASS OR CHLORINE GAS OR CHAIN LINK
CL2	CHLORINE-LIQUID
CLCS	CEMENT-LINED AND COATED STEEL PIPE
CLDIP	CEMENT-LINED DUCTILE IRON PIPE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR, CLEARANCE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CLST	CEMENT-LINED STEEL PIPE
CM	CENTIMETER
CML&C	CEMENT MORTAR LINED & COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN-OUT
COMM	COMMUNICATION
COMP	COMPRESSOR
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUATION
COORD	COORDINATE
COP.	COPPER
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CURB RETURN
CRS	COLD ROLLED STEEL
CS	CAUSTIC SODA
CT	CERAMIC TILE
CTRB	CONCRETE THRUST BLOCK
CTD, CTRD	CENTERED
CTR	CENTER
CTSK	COUNTERSINK
CTV	CABLE TELEVISION
C TO C	CENTER TO CENTER
CU	CUBIC
CU FT	CUBIC FOOT
CU IN.	CUBIC INCH
CU YD	CUBIC YARD
CULV	CULVERT
CV	CHECK VALVE
CW	COLD WATER
CWR	COLD WATER RETURN
CWS	COLD WATER SUPPLY
CYL	CYLINDER
CWO	CHAIN WHEEL OPERATOR
DBA	DEFORMED BAR ANCHOR
d	PENNEY (NAIL SIZE)
D	DRAIN
DB	DISTRIBUTION BOX
DBL	DOUBLE
DEC	DECANT
DEP	DEPTH
DET	DETAIL
DF	DRINKING FOUNTAIN OR DOUGLAS FIR
DG	DOOR GRILLE
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER
DIL	DILUTE
DIMJ	DUCTILE IRON MECHANICAL JOINT
DIP	DUCTILE IRON PIPE
DIPGL	DUCTILE IRON PIPE, GLASS LINED
DISCH/DIS	DISCHARGE
DISP	DISPENSER
DIR	DIRECTION
DN	DOWN, DECANT
DO	DISSOLVED OXYGEN
DR	DOOR OR DRAIN
DS	DRENCH SHOWER AND EYE WASH
DWG	DRAWING
E	EAST OR ELECTRIC UTILITY
EA	EACH
EC	END CURVE
ECC	ECCENTRIC
ED	EFFLUENT DISCHARGE
EF	EACH FACE OR EXHAUST FAN
EFF	EFFLUENT
EG	EXHAUST GRILL
EL	ELEVATION
ELB	ELBOW
ELC	ELECTRIC LOAD CENTER
ELEC	ELECTRIC OR ELECTRICAL
EMER	EMERGENCY
ENG	ENGINE
ENGR	ENGINEER
EO	EMERGENCY OVERFLOW
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ERB	EMERGENCY RETENTION BASIN
EVAP	EVAPORATOR
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EWH	EYE WASH
EXC	EXCAVATE
EXH	EXHAUST
EXHF	EXHAUST FAN
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP	EXPOSED, EXPANSION
EXP JT	EXPANSION JOINT
EXT	EXTERIOR OR EXTENSION
F	FAHRENHEIT
FAB	FABRICATION OR FABRICATE
FACT	FACTORY
FAI	FRESH AIR INTAKE
FB	FLAT BAR
FBD	FOREBAY DRAIN
FBI	FOREBAY INLET
FBO	FOREBAT OUTLET
FC	FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FD BK	FIELD BOOK
FDN	FOUNDATION
FDR	FEEDER
FE	FINAL EFFLUENT
FES	FLARED END SECTION
FEXT	FIRE EXTINGUISHER
FF	FLAT FACE OR FAR FACE OR FINISH FLOOR
F TO F	FACE TO FACE
FG	FINISH GRADE
FH	FIRE HYDRANT
FI	FILTER INFLUENT
FIG.	FIGURE
FIN	FINISH OR FINISHED
FLEX	FLEXIBLE
FLOCC	FLOCCULATOR OR FLOCCULATION
FLG	FLANGE
FLH	FLAT HEAD
FLL	FLOW LINE
FLR	FLOOR
FLTR	FILTER
FMH	FLEXIBLE METAL HOSE
FNSH	FINISH
FO	FUEL OIL
FOC	FACE OF CONCRETE
FOF	FOREBAY OVERFLOW
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FAR SIDE, FLOOR SINK, FINISHED SURFACE OR FORGED STL
FT	FEET OR FOOT
FTG	FOOTING
FTW	FILTER TO WASTE
FW	FINISHED WATER
FWD	FORWARD
° F	DEGREE FAHRENHEIT
G	GAS
GA	GAGE OR GAUGE
GAL	GALLON
GALV	GALVANIZED
GALVI	GALVANIZED IRON
GC	GROOVED COUPLING
GCO	GRADE CLEAN OUT
GCF	GROOVED COUPLING FITTING
GE	GROOVED END
GEN	GENERATOR
GL	GLASS
GLDIP	GLASS LINED DUCTILE IRON PIPE
GLST	GLASS LINED STEEL PIPE
GLV	GLOBE VALVE
GMMU	GLASS MESH MASONRY UNIT
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRD	GRADE OR GROUND
GR BRK	GRADE BREAK
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GVL	GRAVEL
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
H	HEIGHT
HAS	HEADED ANCHOR STUD
HB	HOSE BIB
HD	HUB DRAIN
HDR	HEADER
HDW	HARDWARE
HEX	HEXAGONAL
Hg	MERCURY
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPR	HIGH PRESSURE
HPT	HIGH POINT
HR	HOSE RACK OR HANDRAIL
HS	HYDRANT SUPPLY
HTR	HEATER
HV	HOSE VALVE
H&V	HEATING AND VENTILATION
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWO	HANDWHEEL OPERATED
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HYD	HYDRANT
I&C	INSTRUMENTATION AND CONTROL
I.D.	INSIDE DIAMETER
IE	INVERT ELEVATION
I.F.	INSIDE FACE
I.N.	INCH
INFL	INFLUENT
INS	INSULATED
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRR	IRRIGATION
INSTM	INSTRUMENTATION
INSUL	INSULATE
INVT	INVERT
ISV	ISOLATION VALVE
JAN	JANITOR
JT	JOINT
KG	KILOGRAM
K	THOUSAND POUNDS
KM	KILOMETER
KV	KILOVOLT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LITER, LENGTH OR ANGLE
LA	LIQUID ALUM
LAB	LABORATORY
LAT'L	LATERAL
LAV	LAVATORY
LB, LBS	POUND(S)
LB/CU FT	POUNDS PER CUBIC FOOT
LF	LINEAR FEET
LG	LONG
LH	LEFT HAND
LNTL	LINTEL
LO	LEVER OPERATED
LONG	LONGITUDINAL
LP	LIGHT POLE
LPG	LIQUEFIED PETROLEUM GAS
LPT	LOW POINT
LR	LONG RADIUS
LT	LEFT
LWR	LOWER
LGTH	LENGTH
M	METER
MAG	MAGNETIC
MAN	MANUAL
MACH	MACHINE
MAX	MAXIMUM
MB	MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MG/L	MILLIGRAMS PER LITER
MH	MANHOLE
MI	MALLEABLE IRON
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MK	MARK
MO	MASONRY OPENING OR MOTOR OPERATED
MOD	MODEL OR MODIFY
MTD	MOUNTED
MS	MOP SINK
MSNRY	MASONRY
MTL	METAL OR MATERIAL
MTR	MOTOR
MWS	MAXIMUM WATER SURFACE
N	NORTH
N1	NORTH 1 ALIGNMENT
N2	NORTH 2 ALIGNMENT
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
NEPA	NATIONAL FIRE PROTECTION ASSOCIATION
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO.	NUMBER
N.O.	NORMALLY OPEN OR NUMBER
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NRS	NON RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER OR OVERFLOW DRAIN
O.F.	OUTSIDE FACE OR OVERFLOW
OFR	OVERFLOW RETURN
OG	ORIGINAL GROUND
OH	OVERHEAD
OHE	OVERHEAD ELECTRIC UTILITY
OSD	OPEN SITE DRAIN
O TO O	OUT TO OUT
OPER	OPERATOR
OPNG	OPENING
OZ	OUNCE
P	PILASTER OR POLE
PC	POINT OF CURVE OR PORTLAND CEMENT
PCC	POINT OF COMPOUND CURVE
PCV	PUMP CONTROL VALVE
PD	PROCESS DRAIN
PDR	PUMPED DRAIN
PE	PLAIN END
PENT	PENETRATION
PG	PRESSURE GAGE OR PROPANE GAS
PI	POINT OF INTERSECTION
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
PJF	PREMOLDED JOINT FILLER
PL	PLATE OR PROPERTY LINE
PLYWD	PLYWOOD
PNEU	PNEUMATIC
PO	POLYMER SOLUTION
POA	ANIONIC POLYMER
POB	POINT OF BEGINNING
POC	CATIONIC POLYMER
POE	POINT OF ENDING
PON	NONIONIC POLYMER
PP	POWER POLE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR OR PRESSURE RELIEF
PRC	POINT OF REVERSE CURVE
PRCST	PRECAST
PREFAB	PREFABRICATED
PRESS.	PRESSURE
PRI	PRIMARY
PROP.	PROPERTY
PRV	PRESSURE REGULATING VALVE
PS	PUMP STATION OR PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PT	POINT OF TANGENT
PTDF	PRESSURE TREATED DOUGLAS FIR
PTD/WR	PAPER TOWEL DISPENSER / WASTE RECEPTACLE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVE
PVCC	POINT OF VERTICAL COMPOUND CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVRC	POINT OF VERTICAL RETURN CURVE
PVT	POINT OF VERTICAL TANGENT
PW	POTABLE WATER
R	RISER
R, RAD	RADIUS
RA	RETURN AIR
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD, ROOF DRAIN OR ROUND
RDCR	REDUCER
RDW	REDWOOD
RECIRC	RECIRCULATION
REF	REFER OR REFERENCE
REFR	REFRIGERATOR
REG	REGULATING
REINF	REINFORCE OR REINFORCING
REQD	REQUIRED
REV	REVISION
RJ	RESTRAINED JOINT
RL	RAIN LEADER
RLS	RUBBER LINED STEEL
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RSNTS	RESTRAINTS
RST	REINFORCING STEEL
RT	RIGHT
RTN	RETURN
RV	ROOF VENT
RW	RAW WATER
RWBS	RAW WATER BASIN SOLIDS
R/W	RIGHT-OF-WAY
S	SOUTH
S1	SOUTH 1 ALIGNMENT
SA	SAMPLE
SC	SECONDARY CLARIFIER
SDC	SURGE CHAMBER DRAIN
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCI	SURGE CHAMBER INLET
SCO	SURGE CHAMBER OUTLET
SD	STORM DRAIN, SOAP DISPENSER
SEC	SECONDARY
SECT	SECTION
SK	SINK
SH	SHOWER
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SOLN	SOLUTION
SP	SPACING, SPACE, SPACES OR STATIC PRESSURE
SPD	SUMP PUMP DRAIN OR SUMP PUMP DISCHARGE
SPEC	SPECIFICATION
SPG	SPACING
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	SANITARY SEWER
SST	STAINLESS
SST STL	STAINLESS STEEL
STA	STATION
STC	SURGE TANK CIRCULATION
STD	STANDARD
STIF	STIFFENER
STL	STEEL OR STEEL PIPE
STLS	STEEL PIPE, (SPECIAL)
STR	STAIR
STR TRD	STAIR TREAD
STRUCT	STRUCTURE OR STRUCTURAL
SUBFL	SUB-FLOOR
SUCT/SUC	SUCTION
SUSP	SUSPEND
SV	SOLENOID VALVE
SYM	SYMMETRICAL
SYS	SYSTEM
T	THERMOSTAT OR TREAD
TAN.	TANGENT
TB	TACK BOARD
TBG	TUBING
T&B	TOP AND BOTTOM
TBC	TOP BACK OF CURB
TBE	THREADED BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
T&G	TONGUE AND GROOVE
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE
TF	TOP FACE OR TRICKLING FILTER
TH	TOILET PAPER HOLDER
THK	THICK OR THICKNESS
THRD	THREAD
THRHLD	THRESHOLD
TK	TANK
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
TOE	THREAD ONE END
TOG	TOP OF GRATING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TELEPHONE POLE
TRANS	TRANSITION OR TRANSMITTER
TRANSV	TRANSVERSE
TS	TUBE STEEL
TSS	TOTAL SUSPENDED SOLIDS
TT	THRUST TIE
TTD	TOILET TISSUE DISPENSER
TW	THERMOMETER WELL
TV	TELEVISION OR THERMOSTATIC VALVE
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UC	UNDER CROSSING
UD	UNDERDRAIN
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UGE	UNDERGROUND ELECTRIC UTILITY
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNKN	UNKNOWN
UNO	UNLESS NOTED OTHERWISE
UP	UTILITY POLE
UR	URINAL
V	VENT, SANITARY
VTR	VENT THROUGH ROOF
W	WATER, WEST OR WIDTH
W/	WITH
WC	WATER CLOSET, WATER COLUMN
WCO	WALL CLEANOUT
WD	WOOD OR WASHWATER DRAIN
WF	WIDE FLANGE
WH	WATER HEATER
WM	WATER METER
W/O	WITHOUT
WR	WATER RESISTANT
WS	WATER SURFACE OR WATER STOP
WSCOT	WAINSCOT
WSEL	WATER SURFACE ELEVATION
WSP	WELDED STEEL PIPE
WSTP	WATER STOP
WT	WEIGHT
WWM	WELDED WIRE MESH
XS	EXTRA STRONG
XXS	DOUBLE EXTRA STRONG
YD	YARD
YR	YEAR

PRELIMINARY

DSGN	R MARKEN						
DR	C SCHNEE						
CHK	K HEFFERNAN						
APVD	KMH/BJS	NO.	DATE	REVISION	BY	APVD	

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SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

GENERAL
JUNIPER PUMP STATION
ABBREVIATIONS

SHEET	SHEET-NO
DWG	JN01-G-04
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN01nG004d_171473.dgn PLOT DATE: 03/01/2006 PLOT TIME: 9:22:03 AM

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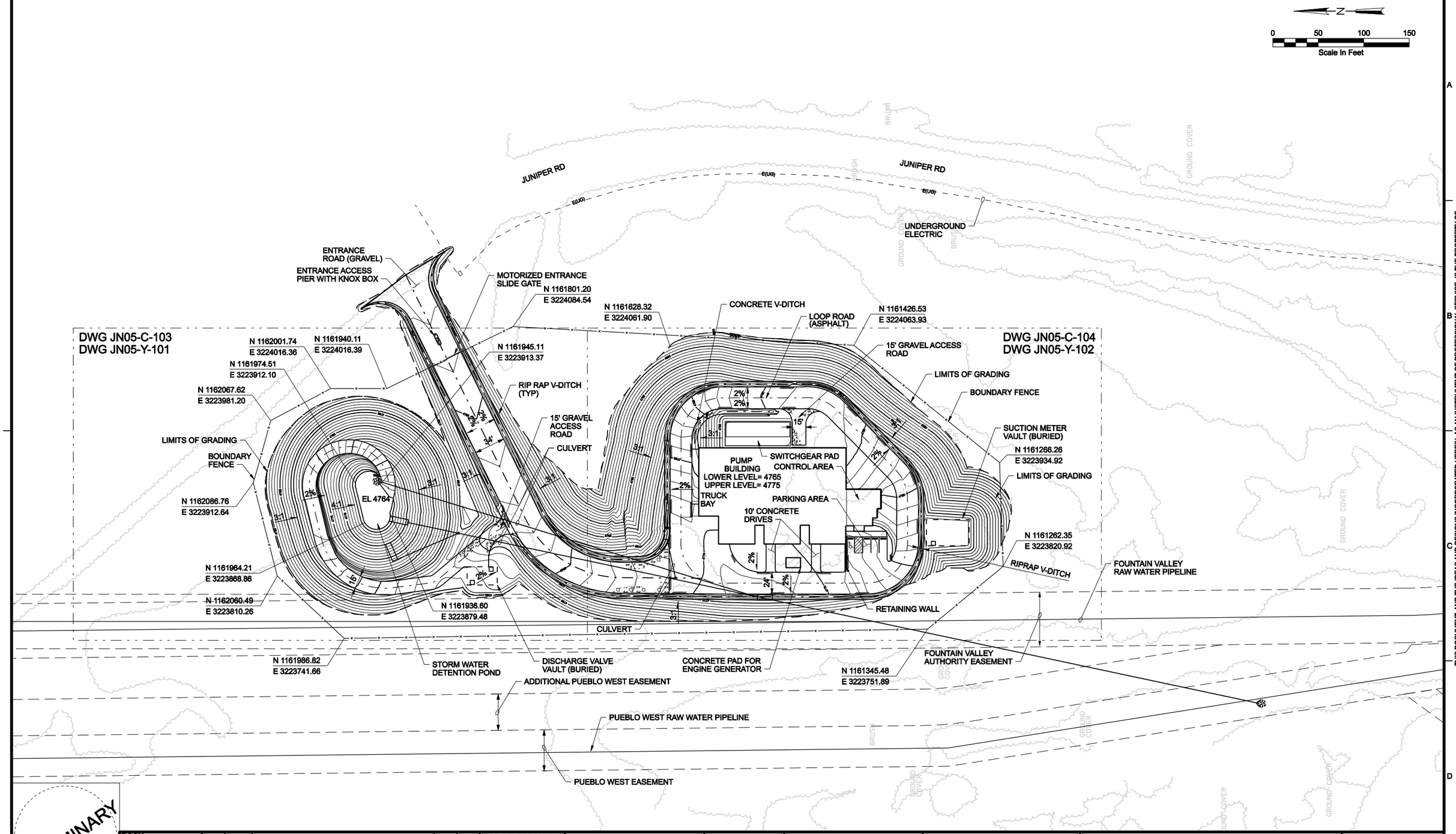

0 50 100 150
Scale In Feet

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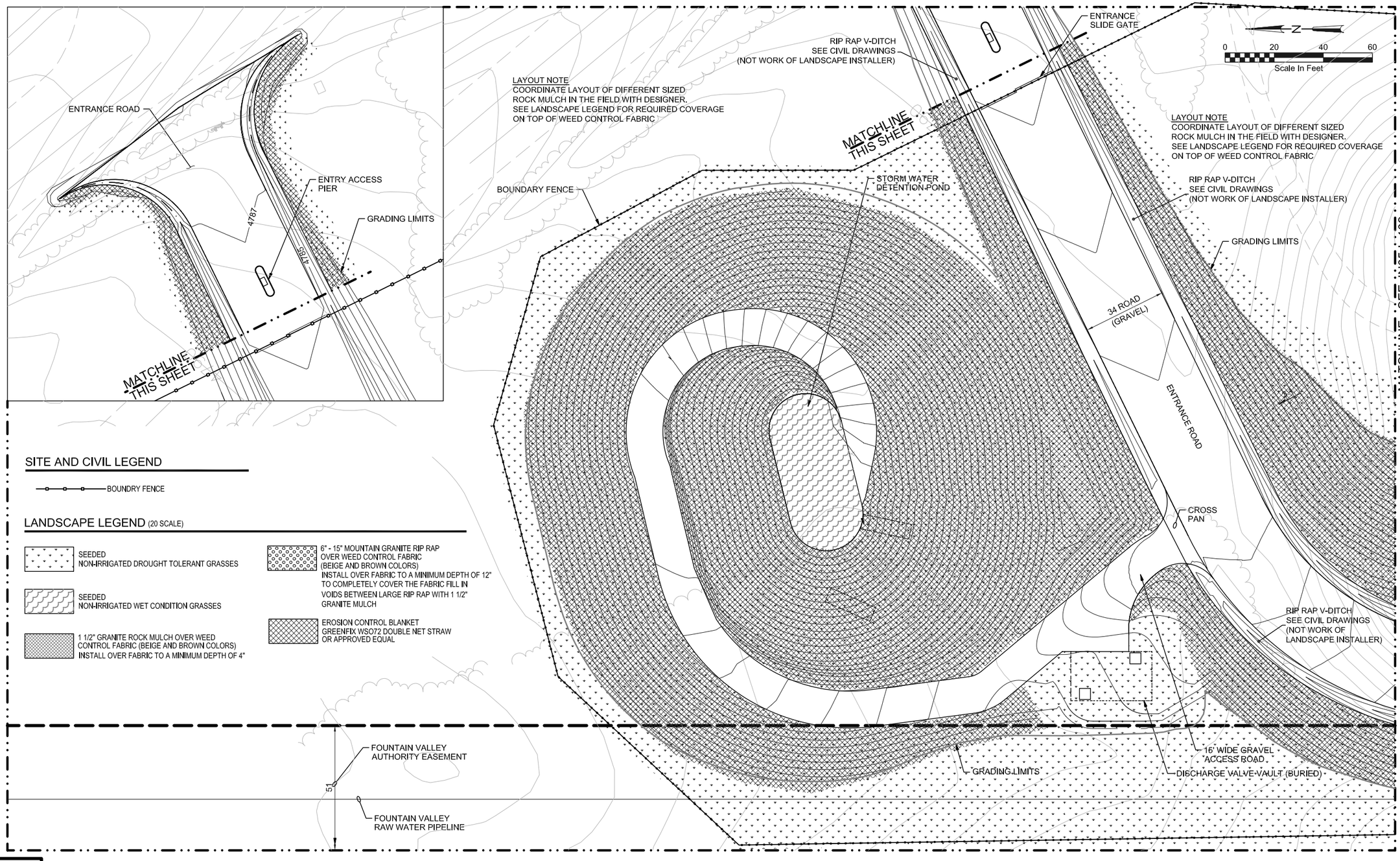
SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

SITE CIVIL
JUNIPER PUMP STATION SITE LAYOUT PLAN

SHEET	SHEET-NO
DWG	JN05-C-102
DATE	NOV 2005
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN05nC102d_171473.dgn PLOT DATE: 11/07/2005 PLOT TIME: 4:29:26 PM



SITE AND CIVIL LEGEND

BOUNDRY FENCE

LANDSCAPE LEGEND (20 SCALE)

SEEDED
NON-IRRIGATED DROUGHT TOLERANT GRASSES

SEEDED
NON-IRRIGATED WET CONDITION GRASSES

1 1/2" GRANITE ROCK MULCH OVER WEED CONTROL FABRIC (BEIGE AND BROWN COLORS)
INSTALL OVER FABRIC TO A MINIMUM DEPTH OF 4"

6" - 15" MOUNTAIN GRANITE RIP RAP OVER WEED CONTROL FABRIC (BEIGE AND BROWN COLORS)
INSTALL OVER FABRIC TO A MINIMUM DEPTH OF 12" TO COMPLETELY COVER THE FABRIC FILL IN VOIDS BETWEEN LARGE RIP RAP WITH 1 1/2" GRANITE MULCH

EROSION CONTROL BLANKET
GREENFIX WS072 DOUBLE NET STRAW OR APPROVED EQUAL

PRELIMINARY

DSGN	GF						
DR	GF						
CHK	CHECKED-BY						
APVD	APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

SITE CIVIL
JUNIPER PUMP STATION
LANDSCAPE PLAN 1 OF 2

SHEET	SHEET-NO
DWG	JN05-L-101
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME:JN05nL101d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME: $PLOTTIME

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MATCHLINE - SEE JN05-L-101

LIMITS OF GRADING

LOOP ROAD PROFILE BEGIN AND END POINT (SEE ROADWAY PROFILE SHEET)

LAYOUT NOTE
COORDINATE LAYOUT OF DIFFERENT SIZED ROCK MULCH IN THE FIELD WITH DESIGNER. SEE LANDSCAPE LEGEND FOR REQUIRED COVERAGE ON TOP OF WEED CONTROL FABRIC

RIP RAP V-DITCH
SEE CIVIL DRAWINGS
(NOT WORK OF LANDSCAPE INSTALLER)

LIMITS OF GRADING

LOOP ROAD

SWITCHGEAR PAD

15' WIDE GRAVEL ACCESS ROAD

CONCRETE

PUMP BUILDING
LOWER LEVEL= 4765.00
UPPER LEVEL= 4775.00

LAYOUT NOTE
COORDINATE LAYOUT OF DIFFERENT SIZED ROCK MULCH IN THE FIELD WITH DESIGNER. SEE LANDSCAPE LEGEND FOR REQUIRED COVERAGE ON TOP OF WEED CONTROL FABRIC

TRUCK BAY

1' HIGH CURB

BOLLARDS

CONTROL AREA
FF ELEV 4780.00

CONCRETE SIDEWALK

CONCRETE PAD FOR ENGINE GENERATOR

PARKING AREA

RETAINING WALL

DRIVE

DRIVE

CULVERT

ENTRANCE ROAD

RIP RAP V-DITCH
SEE CIVIL DRAWINGS
(NOT WORK OF LANDSCAPE INSTALLER)

LOOP ROAD

(ASPHALT)

BOUNDARY FENCE

SUCTION METER VAULT (BURIED)

RIPRAP LINED, TYP

RIP RAP V-DITCH
SEE CIVIL DRAWINGS
(NOT WORK OF LANDSCAPE INSTALLER)

FOUNTAIN VALLEY AUTHORITY EASEMENT

FOUNTAIN VALLEY RAW WATER PIPELINE

N

0 20 40 60
Scale In Feet

SITE AND CIVIL LEGEND

BOUNDRY FENCE

LANDSCAPE LEGEND (20 SCALE)

SEEDED
NON-IRRIGATED DROUGHT TOLERANT GRASSES

SEEDED
NON-IRRIGATED WET CONDITION GRASSES

1 1/2" GRANITE ROCK MULCH OVER WEED CONTROL FABRIC (BEIGE AND BROWN COLORS) INSTALL OVER FABRIC TO A MINIMUM DEPTH OF 4"

6" - 15" MOUNTAIN GRANITE RIP RAP OVER WEED CONTROL FABRIC (BEIGE AND BROWN COLORS) INSTALL OVER FABRIC TO A MINIMUM DEPTH OF 12" TO COMPLETELY COVER THE FABRIC FILL IN VOIDS BETWEEN LARGE RIP RAP WITH 1 1/2" GRANITE MULCH

EROSION CONTROL BLANKET
GREENFIX WSO72 DOUBLE NET STRAW
OR APPROVED EQUAL

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DR	GF
CHK	CHECKED-BY
APVD	APPROVED-BY

NO.	DATE	REVISION	BY	APVD

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SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

SITE CIVIL
JUNIPER PUMP STATION
LANDSCAPE PLAN 2 OF 2

SHEET	SHEET-NO
DWG	JN05-L-102
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN05nL102d_171473.dwg PLOT DATE: 2·17·2006 PLOT TIME: $PLOTTIME

LANDSCAPE CONSTRUCTION NOTES

1. LANDSCAPE PLANS WERE PREPARED WITH BASE INFORMATION PROVIDED BY CH3MHILL.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE COST TO REPAIR UTILITIES, ADJACENT LANDSCAPE, PUBLIC AND PRIVATE PROPERTY THAT IS DAMAGED BY THE CONTRACTOR OR BY THEIR SUB-CONTRACTOR'S OPERATIONS DURING INSTALLATION OR THE SPECIFIED MAINTENANCE PERIOD.
3. THE CONTRACTOR SHALL REPORT ANY DISCREPANCY IN PLAN VS. FIELD CONDITIONS IMMEDIATELY TO THE LANDSCAPE ARCHITECT, PRIOR TO CONTINUING WITH THE PORTION OF THE WORK IN QUESTION.
4. THE CONTRACTOR IS EXPECTED TO BE FAMILIAR WITH AND TO FOLLOW THE LANDSCAPE PLANS AND SPECIFICATIONS.
5. REFER TO THE ENGINEERS PLANS FOR GRADING, WALK, DRAINAGE, RETAINING WALL AND RIP-RAP V-DITCH INFORMATION AND LOCATIONS.
6. SEEDED AREAS ARE TO RECEIVE THE APPROPRIATE SEED MIXES AS INDICATED.
7. ALL DISTURBED AREAS TO BE RE-SEEDED BY THE CONTRACTOR. SEEDED AREAS ARE TO RECEIVE SOIL AMENDMENTS PER SPECIFICATIONS. SEED MIX AND SEEDING RATE LISTED ON THIS SHEET.

SEED ESTABLISHMENT

THE PROPOSED DROUGHT TOLERANT SEED MIX WILL BE ESTABLISHED USING A STRINGENT ESTABLISHMENT PROGRAM. NATIVE GRASS PLANTING IN THIS REGION REQUIRE SPECIAL ATTENTION TO INSURE A SUCCESSFUL STAND OF GRASS. PLANTING METHODS, WEED CONTROL, AND MOWING SCHEDULES WILL BE UTILIZED TO PROMOTE THE NATIVE GRASS ESTABLISHMENT.

THE LANDSCAPE INSTALLER WILL BE REQUIRED TO PRODUCE A HEALTHY STAND OF NATIVE GRASS WITH EVIDENCE OF AT LEAST 10 GRASS PLANTS (NUMEROUS BLADES OF GRASS PROTRUDING FROM ONE ROOT MASS) PER SQUARE FOOT WITHIN ONE YEAR OF PLANTING.

THE LANDSCAPE INSTALLER WILL BE REQUIRED TO FOLLOW A STRINGENT MAINTENANCE PROGRAM TO CONTROL WEEDS AND PROMOTE SPREADING OF THE GRASSES (SEE LANDSCAPE MAINTENANCE SPECIFICATION). THE LANDSCAPE INSTALLER IS REQUIRED TO PROVIDE THE FIRST YEAR MAINTENANCE FOR THE LANDSCAPE AS PART OF THE BID PRICE FOR THE PROJECT. INSTALLER IS RESPONSIBLE TO MAINTAIN THE LANDSCAPE FOR THE FIRST YEAR AFTER FINAL ACCEPTANCE OF THE LANDSCAPE INSTALLATION BY THE OWNER.

THE OWNER AND LANDSCAPE INSTALLER WILL IMPLEMENT THE FOLLOWING MOWING SCHEDULE.

MOWING SCHEDULE

CONDITIONS	MOWING	MOWING HEIGHT	PARTY RESPONSIBLE
1 YEAR	10"	4-6"	INSTALLATION CONTRACTOR
2 YEAR	10"	4-6"	OWNER
3 YEAR	16"	4-6"	OWNER
4 YEAR +	ONCE IN FALL	4-6"	OWNER

DROUGHT TOLERANT SEED MIX

COMMON NAME	SCIENTIFIC NAME	% OF TOTAL
WESTERN WHEATGRASS	BARTON	19%
SAND DROPSEED	NATIVE	5%
SWITCH GRASS	NEBRASKA 28	20%
WEEPING LOVE GRASS	MORPHA	8%
SLENDER WHEATGRASS	NATIVE	14%
SIDEOATS GRAMA	EL RENO	20%
LITTLE BLUESTEM	PASTURA	14%
		TOTAL 100%

-DRILL SEED AT 25 LBS. PURE LIVE SEED/ACRE.
-INCREASE RATE 2 TIMES IF BROADCAST SEEDING METHOD IS USED.
-SEE SPECIFICATIONS FOR SOIL PREP, HYDROMULCH AND EROSION CONTROL BLANKET REQUIREMENTS.

WET CONDITION SEED MIX

COMMON NAME	SCIENTIFIC NAME	% OF TOTAL
WESTERN WHEATGRASS	PASCOPYRUM SMITHII VAR ARRIBA	29%
WOOLY SEDGE	CAREX LANUGINOSA	1%
BLUE GRAMA	BOUTELOUA GRACILIS VAR LOVINGTON	9%
NEBRASKA SEDGE	CAREX NEBRASKENSIS	1%
SWITCHGRASS	PANICUM VIRGATUM VAR BLACKWELL	26%
INLAND SALTGRASS	DISTICLIS STRICTA	5%
CREEPING SPIKERUSH	ELEOCHARIS PALUSTRIS	1%
HARDSTEM BULRUSH	SCIRPUS ACUTUS	8%
PRAIRIE CORDGRASS	SPARTINA PECTINATA	20%
		TOTAL 100%

-DRILL SEED AT 20 LBS. PURE LIVE SEED/ACRE.
-INCREASE RATE 2 TIMES IF BROADCAST SEEDING METHOD IS USED.
-SEE SPECIFICATIONS FOR SOIL PREP, HYDROMULCH AND EROSION CONTROL BLANKET REQUIREMENTS.

SEEDING REQUIREMENTS

LANDSCAPE INSTALLER WILL BE RESPONSIBLE TO DRILL SEED BY MEANS OF A BRILLION MECHANICAL DRILL SEEDER ALL AREAS ACCESSIBLE TO THIS EQUIPMENT. AREAS NOT ACCESSIBLE TO THIS EQUIPMENT SHALL BE BROAD CAST SEEDED. INCREASE SEEDING RATE 2 TIMES IF BROADCAST SEEDING METHOD IS USED. LANDSCAPE INSTALLER AND DESIGN BUILDER SHALL AGREE ON AREAS NOT ACCESSIBLE TO DRILL EQUIPMENT PRIOR TO STARTING THE SEEDING ON THE PROJECT.

IMMEDIATELY FOLLOWING SEEDING APPLY MULCH. LANDSCAPE INSTALLER WILL BE RESPONSIBLE TO STRAW CRIMP WITH MECHANICAL CRIMPER ALL AREAS ACCESSIBLE TO THIS EQUIPMENT. AREAS NOT ACCESSIBLE TO THIS EQUIPMENT SHALL BE HYDROMULCHED. SEE SPECIFICATIONS SECTION 02931. LANDSCAPE INSTALLER AND DESIGN BUILDER SHALL AGREE ON AREAS NOT ACCESSIBLE TO MECHANICAL CRIMPERS PRIOR TO STARTING THE MULCHING ON THE PROJECT.

THE LANDSCAPE INSTALLER WILL BE RESPONSIBLE TO INSTALL EROSION CONTROL BLANKETS IN ALL AREAS VULNERABLE TO SOIL EROSION, THIS INCLUDES BOTH AREAS STRAW CRIMPED OR HYDROMULCHED. LANDSCAPE INSTALLER SHALL BID THE PROJECT WITH THE COVERAGE OF BLANKET SHOWN ON THE PLANS. IF DETERMINED IN THE FIELD ADDITIONAL BLANKETS ARE NEED SUBMIT A CHANGE ORDER FOR REVIEW AND APPROVAL. SWALES PROTECTED BY RIP RAP DO NOT NEED EROSION CONTROL BLANKETS.

SEEDING ON SITE CAN ONLY TAKE PLACE BETWEEN MARCH 15 TO JULY 4 AND SEPTEMBER 15 TO OCTOBER 15.

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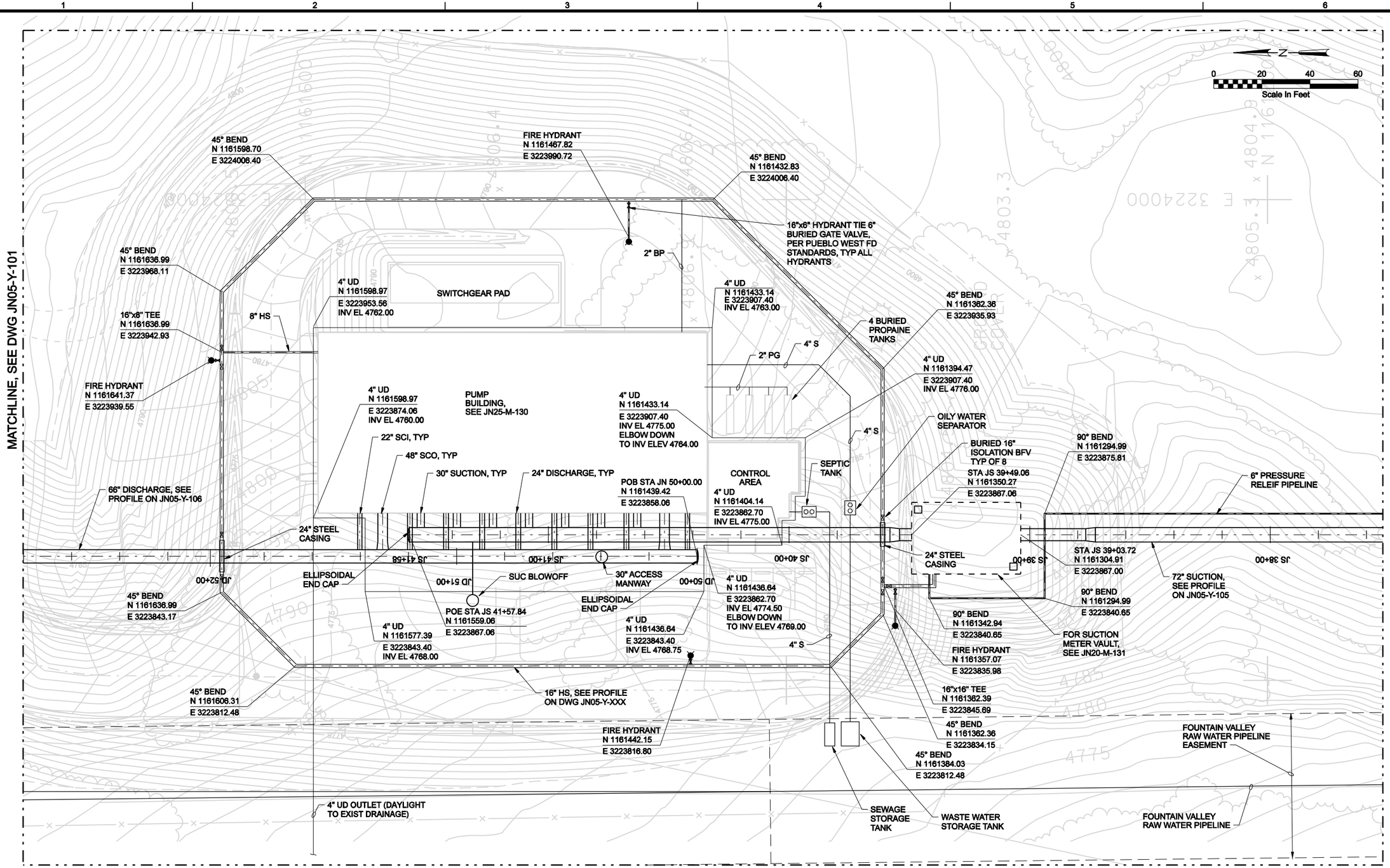
DR GF					BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	NORRIS DESIGN Nearby Landscape Architects 1101 Bannock Street Denver, Colorado 80204 P 303.892.1166 F 303.892.1186 www.norris-design.com
CHK CHECKED-BY						SDS Southern Delivery System
APVD APPROVED-BY	NO.	DATE	REVISION	BY	APVD	

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

SITE CIVIL
JUNIPER PUMP STATION
NOTES AND SEED MIX

SHEET	SHEET - NO
DWG	JN05-L-401
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN05nL401d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME: $PLOTTIME



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DR	R MARKEN						
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APVD	KMH/BJS	NO.	DATE	REVISION	BY	APVD	

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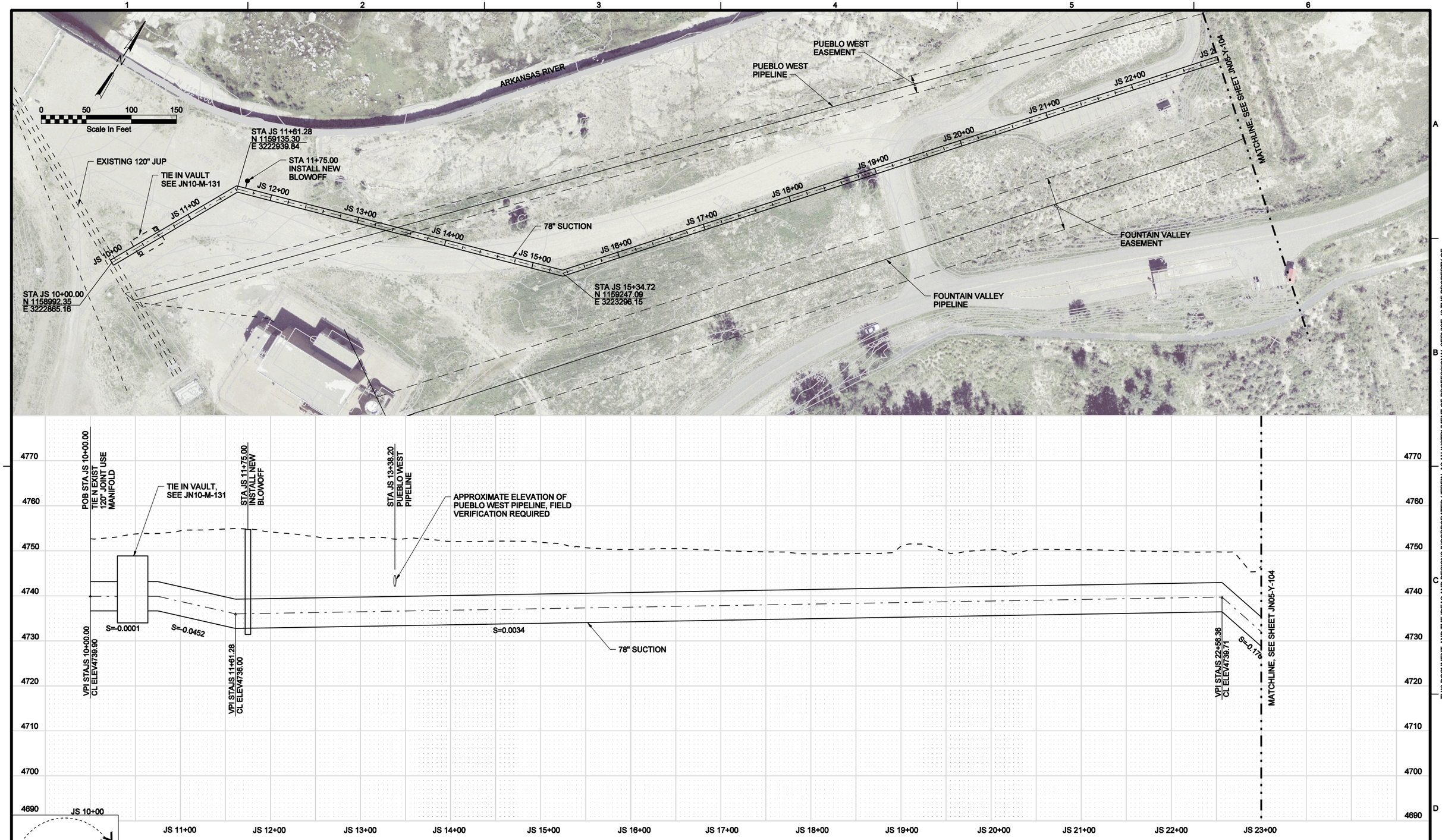
SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

SITE PIPING
JUNIPER PUMP STATION
PLAN
2 OF 2

SHEET	SHEET-NO
DWG	JN05-Y-102
DATE	NOV 2005
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN05nY102d_171473.dgn PLOT DATE: 11/09/2005 PLOT TIME: 4:27:40 PM



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DR	L STUDER						
CHK	K CLEGG						
APVD	KMH/BJS	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

SITE PIPING
JUNIPER PUMP STATION
78" SUCTION PIPELINE PLAN AND PROFILE
STAT 10+00 TO STA 24+00

SHEET	SHEET-NO
DWG	JN05-Y-103
DATE	NOV 2005
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN05nY103d_171473.dgn PLOT DATE: 11/10/2005 PLOT TIME: 9:50:19 AM

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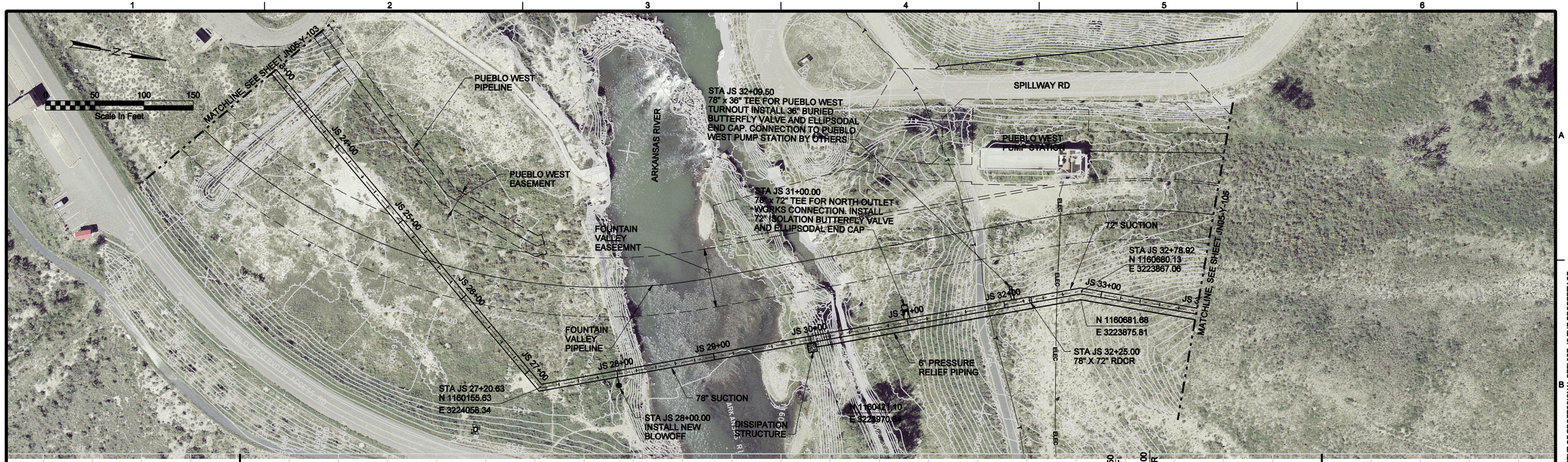

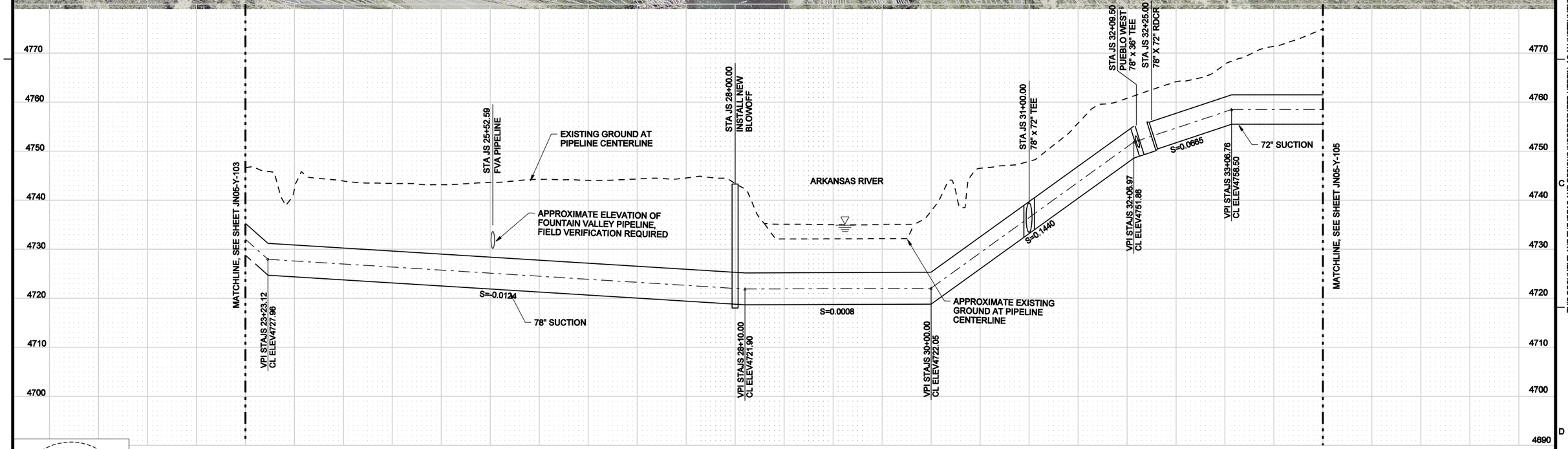

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CHK	K CLEGG
APVD	KMH/BJS

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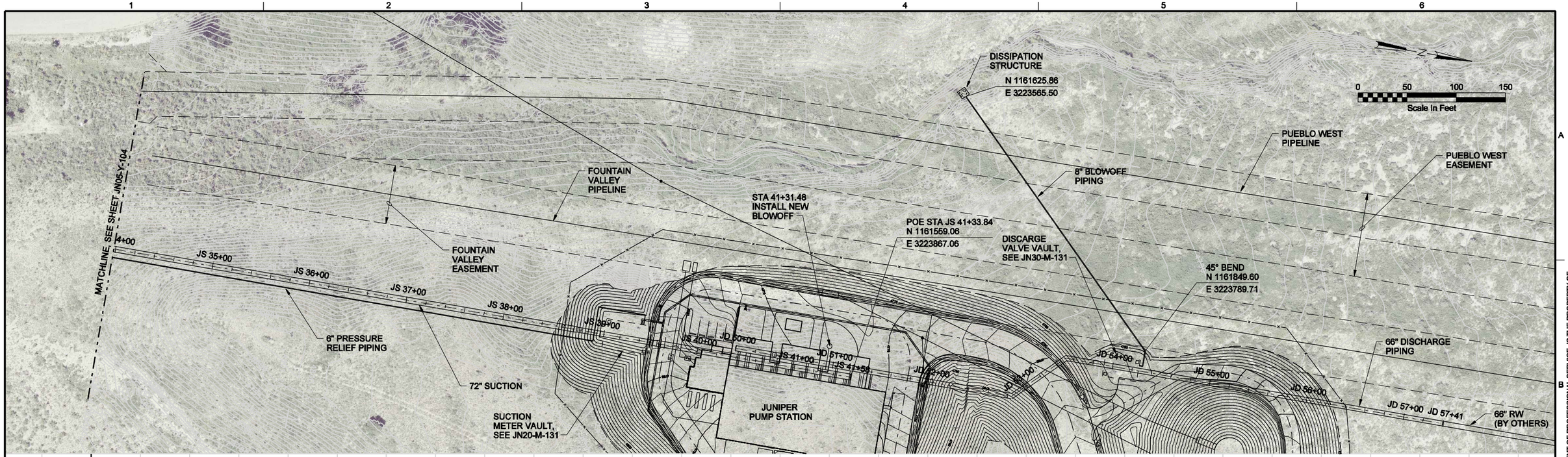
SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

PLAN AND PROFILE
JUNIPER PUMP STATION
78"/72" SUCTION PIPELINE PLAN AND PROFILE
STA 24+00 TO STA 34+00

SHEET	SHEET-NO
DWG	JN05-Y-104
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN05nY104d_171473.DGT PLOT DATE: 8/1/2008 PLOT TIME: 2:15:52 PM



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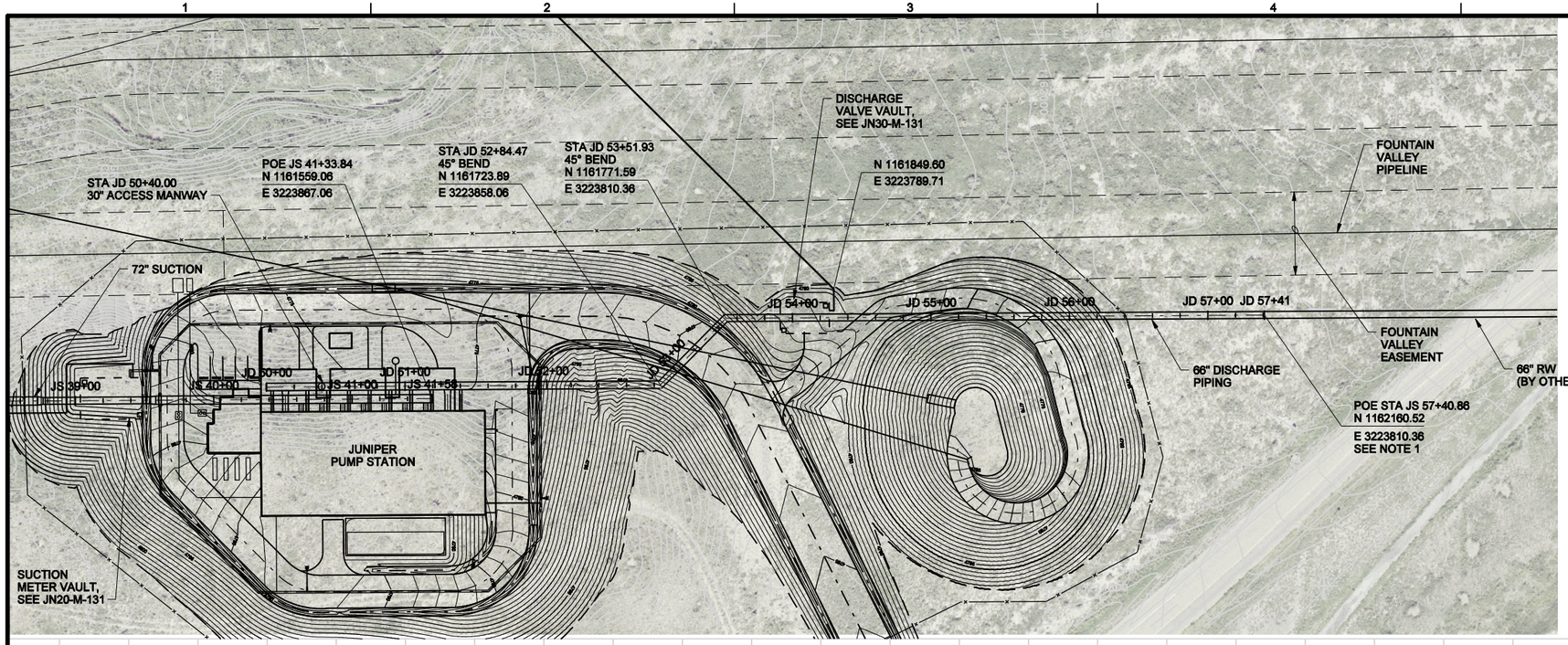
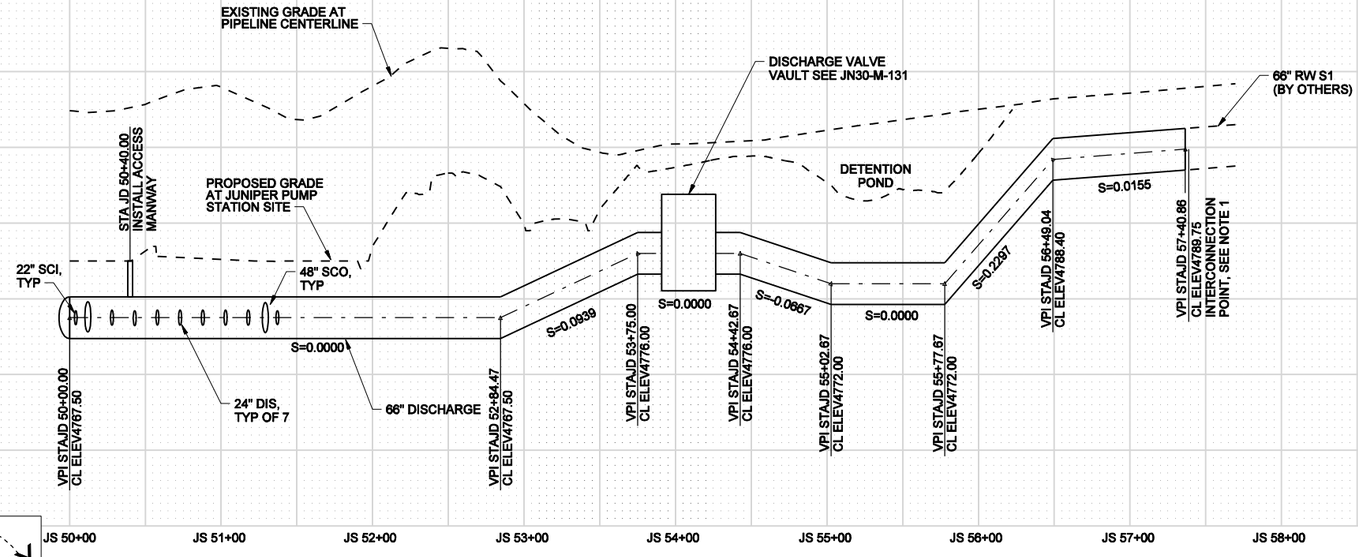
SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

PLAN AND PROFILE
JUNIPER PUMP STATION
72"/60" SUCTION PIPELINE PLAN AND PROFILE
STA 34+00 TO END

SHEET	SHEET-NO
DWG	JN05-Y-105
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN05nY105d_17147 PLOT DATE: 8/14/2008 PLOT TIME: 10:42:54 AM





NOTES:

1. PUMP STATION CONTRACTOR SHALL ENDCAP INTERCONNECTION POINT AFTER INSTALLATION WITH TEST BULK HEAD. AFTER TESTING, PUMP STATION CONTRACTOR WILL PERFORM TIE-IN AT INTERCONNECTION POINT.

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SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

PLAN AND PROFILE
JUNIPER PUMP STATION
66" DISCHARGE PIPELINE PLAN AND PROFILE
STA 50+00 TO STA 57+40.86

SHEET	SHEET-NO
DWG	JN05-Y-106
DATE	NOV 2005
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1146977 FILENAME: JN05nY106d_171473.dgn PLOT DATE: 11/09/2005 PLOT TIME: 4:47:53 PM

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REUSE OF DOCUMENTS:

PUMP STATION ZONING & CODE ISSUES

LOCATION:

THE JUNIPER PUMP STATION IS LOCATED IN AN AREA WITHIN THE LAKE PUEBLO STATE PARK, WHICH IS FEDERAL LAND UNDER THE JURISDICTION OF THE BUREAU OF RECLAMATION. SPECIFICALLY, THE PUMP STATION IS LOCATED EAST OF THE DAM, WEST OF JUNIPER ROAD AND NORTH OF THE ARKANSAS RIVER IN CLOSE PROXIMITY TO THE PUEBLO WEST PUMP STATION.

ADDRESS:

NO ADDRESS DETERMINED YET.

GENERAL:

DUE TO CHANGING COUNTY PERMIT REGULATIONS, FURTHER DISCUSSIONS WITH PUEBLO REGIONAL BUILDING AND PLANNING DEPARTMENTS WERE SUSPENDED AT THEIR REQUEST. THE FOLLOWING ANALYSIS IS BASED UPON THE ARCHITECT'S REVIEW OF CODES AND PROFESSIONAL OPINION AND WILL REQUIRE CONFIRMATION WITH THE RESPECTIVE PUEBLO DEPARTMENTS PRIOR TO COMPLETION OF THE CONSTRICTION DOCUMENTS.

APPLICABLE CODES:

2003 IBC	INTERNATIONAL BUILDING CODE	2003 UMC	UNIFORM MECHANICAL CODE
2003 IFC	INTERNATIONAL FIRE CODE	2002 NEC	NATIONAL ELECTRICAL CODE
2003 UPC	UNIFORM PLUMBING CODE	2000	INTERNATIONAL ENERGY CONSERVATION CODE

STRUCTURAL DESIGN:

SEE GENERAL STRUCTURAL NOTES
ON DRAWINGS JN01-G-07 AND 08.

OCCUPANCY GROUPS: SECTION 306

F-2

OCCUPANCY SEPARATIONS: Table 302.3.2

NONE

- IBC 302.2 ACCESSORY USE AREAS: ALLOWS EXCEPTION TO FIRE BARRIER (OCCUPANCY SEPARATION AT CONTROL BUILDING) AS THE CONTROL AREA (1,531 SF) IS LESS THAN 10% OF THE TOTAL AREA OF THE 1 ST FLOOR (17,560 SF)

TYPE OF CONSTRUCTION: CHAPTER 6

III-B

ALLOWABLE AREA & MAX. HEIGHT OF BLDG. IN STORIES: Table 503

F-2	18,000 SF	3 STORIES	55 FT. MAX. HEIGHT

ACTUAL BUILDING AREAS:

BASEMENT	12,164 SF (PUMP ROOM)
1 ST FLOOR	17,560 SF (OPERATING DECK AND CONTROL AREA)

ALLOWABLE AREA & MAX. HEIGHT OF BLDG. IN STORIES: Table 503

- THE PUMP BUILDING FLOOR AREA IS LESS THAN ALLOWED BY TABLE 503 FOR TYPE F-2 USE AND III-B CONSTRUCTION.
- THE PUMP BUILDING IS A SINGLE STORY STRUCTURE AND IS LESS THAN THE 3 STORIES ALLOWED.
- THE PUMP BUILDING COMPLIES WITH THE MAXIMUM ALLOWABLE HEIGHT.

GENERAL BUILDING LIMITATIONS: IBC Chapter 6 & 7

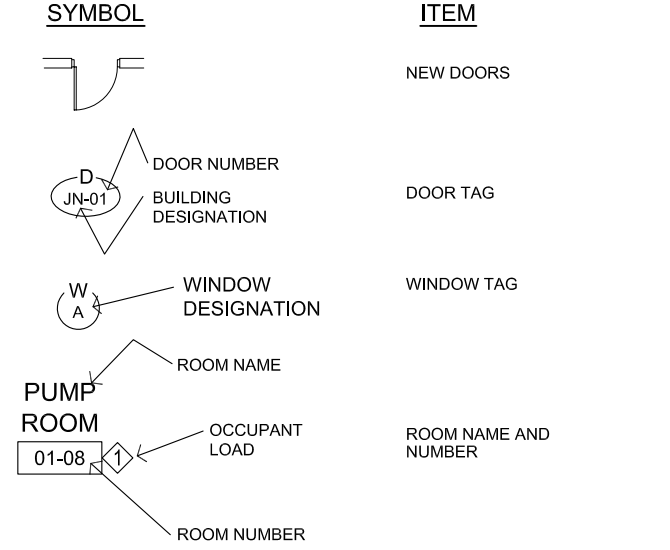
OCC./CONST.	BEARING	NONBEARING	OPENINGS
F-2/III-B	0 HR > 30 FT.	0 HR > 30 FT.	UNPROTECTED > 30 FT. NO LIMIT > 30 FT.

PUMP STATION ZONING & CODE ISSUES (CONT.)

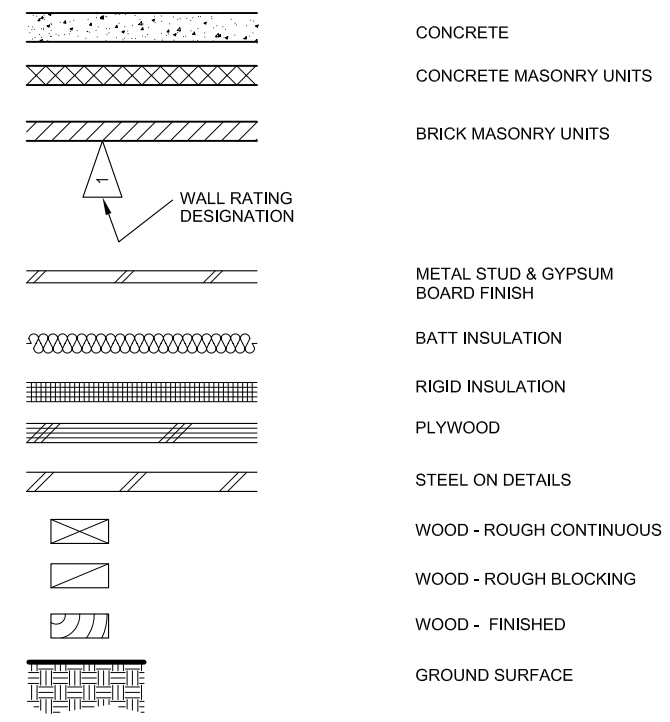
SPECIFIC CODE CRITERIA:

IBC 1004.2.4: (EXITING)	300 FT MAXIMUM WITHOUT FIRE SPRINKLER SYSTEM - THE BUILDING DESIGN COMPLIES
IBC & IFC CHAPTER 9: (FIRE-EXTINGUISHING SYSTEMS)	SPRINKLER SYSTEM IS REQUIRED DUE TO NONCOMPLIANCE WITH ACCESS OPENINGS PER IBC & IFC 903.2.10 COLORADO SPRINGS UTILITIES INTENDS TO SUBMIT A REQUEST FOR VARIANCE REGARDING THE FIRE SPRINKLER REQUIREMENT. APPROVAL BY LETTER WAS GRANTED BY MR. XXX XXX OF THE PUEBLO REGIONAL BUILDING DEPARTMENT DATED M/D/Y TO ALLOW : ● ELIMINATE REQUIREMENT FOR FIRE SPRINKLER SYSTEM & PROVIDE STANDPIPES IN ACCORDANCE WITH CHAPTER 9 OF THE 2003 IBC AND NFPA 14 WITH A MAX. SEPARATION OF 130 FEET.
FIRE DEPARTMENT / IFC REQUIREMENTS	ON SEPTEMBER 15, 2005 A MEETING WAS HELD WITH PUEBLO WEST FIRE DEPARTMENT (PWFD) CHIEF CASERTA AND INSPECTOR KELLY TO DISCUSS SPECIFIC FIRE DEPARTMENT CRITERIA AND REQUIREMENTS. AGREEMENT OF ISSUES ARE AS FOLLOWS: ● AN INTERGOVERNMENTAL AGREEMENT OR OUTSIDE CONTRACT WILL BE REQUIRED FOR PWFD TO PROVIDE FIRE PROTECTION SERVICES. ● FIRE PROTECTION DURING CONSTRUCTION IS REQUIRED. A ROAD TO THE SITE WITH SUITABLE ROAD BASE AND A FIRE HYDRANT IS REQUIRED. ● AN ASPHALT PAVED LOOP ROAD AROUND THE BUILDING IS REQUIRED WITH TURNING RADIUSES AS REQUIRED BY PWFD. 8% MAXIMUM GRADES ARE REQUIRED. ● A KNOX BOX AT THE SITE ENTRANCE IS REQUIRED. THIS BOX IS REQUIRED AT THE ONSET OF CONSTRUCTION. ● FIRE LANE SIGNAGE IS REQUIRED AT HYDRANT AND THE FIRE DEPARTMENT CONNECTION LOCATIONS. A RED PAINTED LINE ON THE PAVEMENT IS ALSO REQUIRED AT THE SAME LOCATIONS.

ARCHITECTURAL LEGEND



MATERIAL LEGEND



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LINTJER + HAYWOOD ARCHITECTS

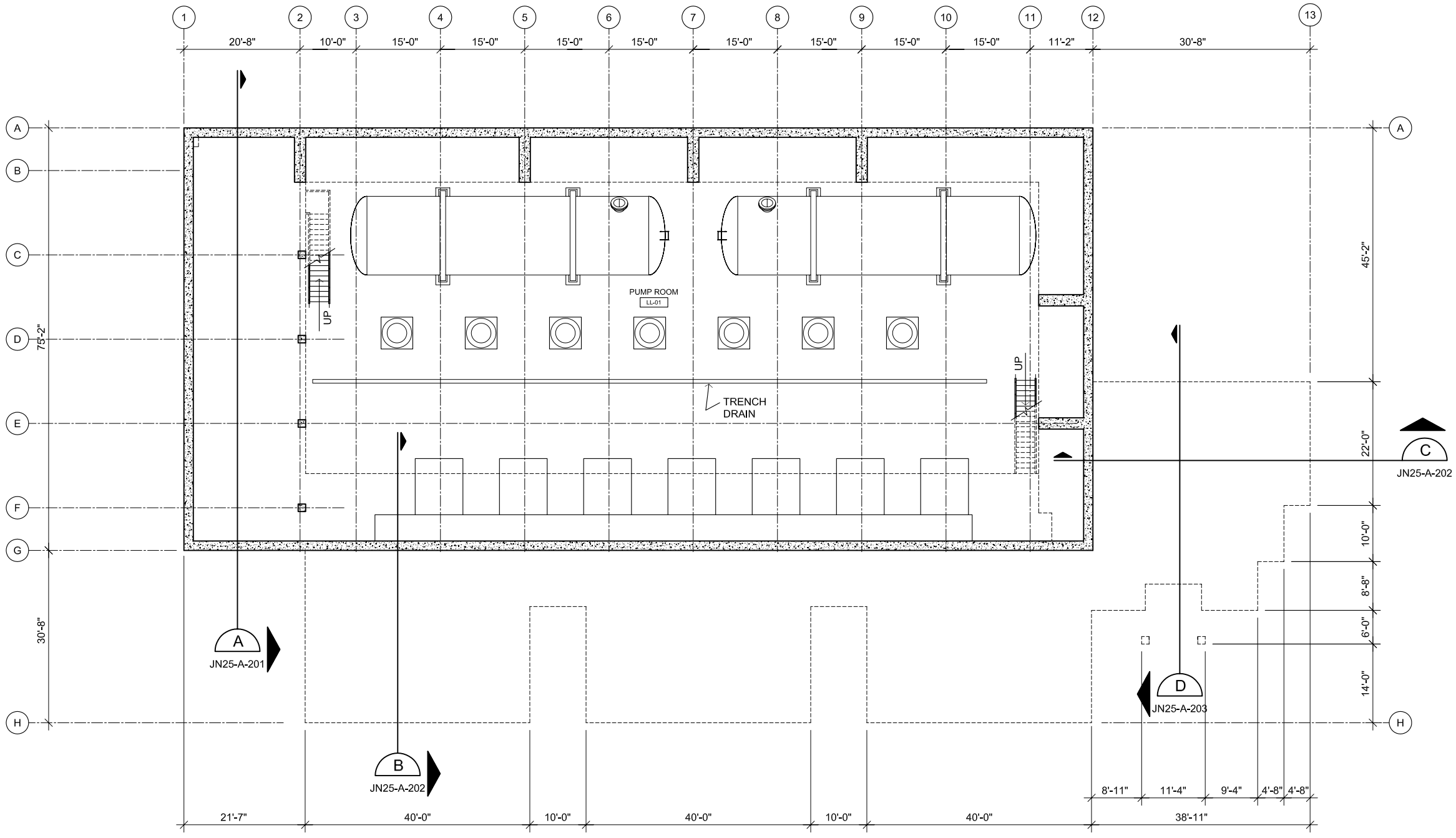
SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

ARCHITECTURAL
JUNIPER PUMP STATION
BUILDING CODE ANALYSIS
ARCHITECTURAL LEGENDS

SHEET	SHEET-NO
DWG	JN01-G-06
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN01nG06d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:



N

LOWER LEVEL PLAN

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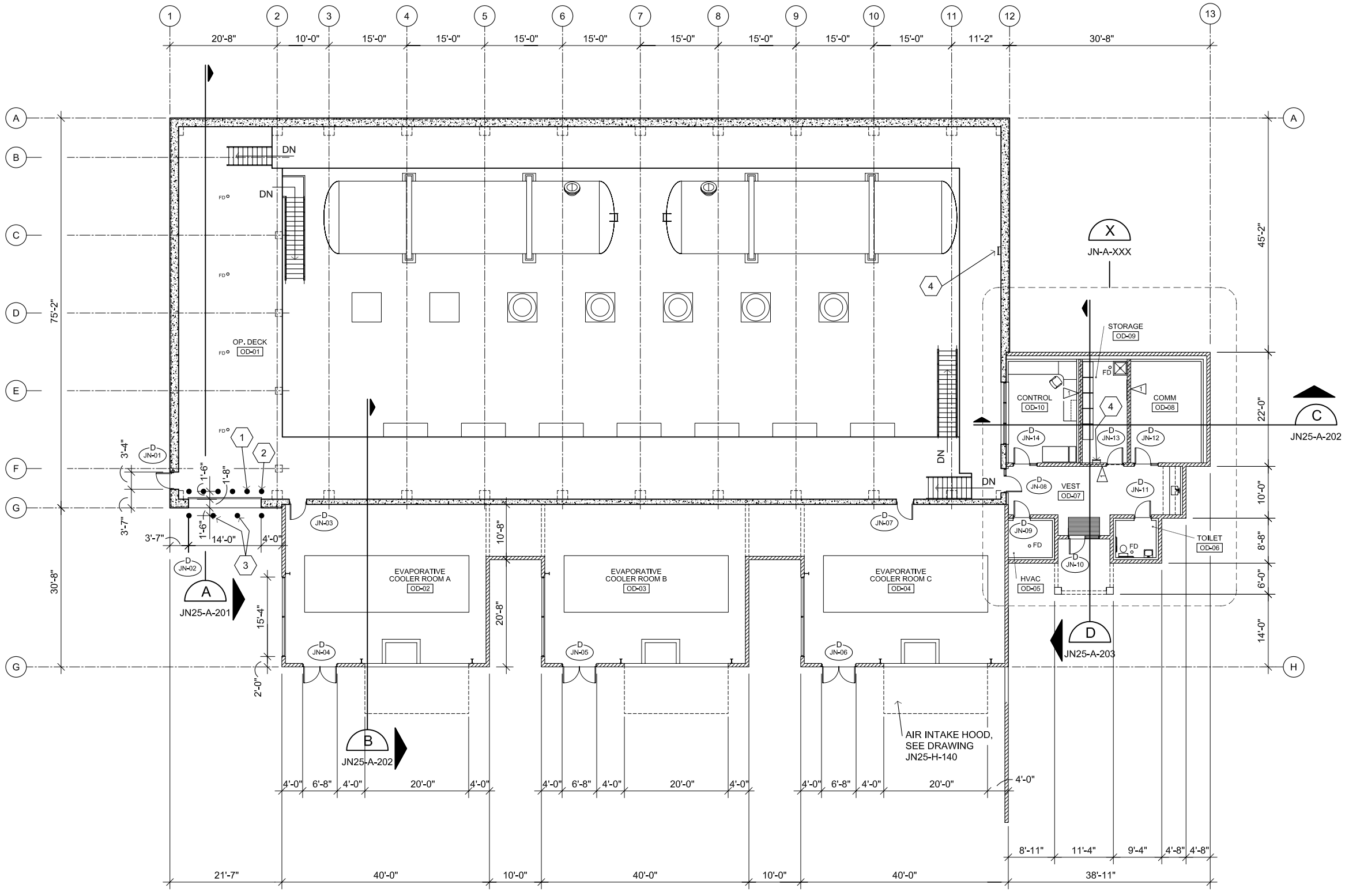
SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

ARCHITECTURAL
JUNIPER PUMP STATION
PUMP BUILDING
LOWER LEVEL PLAN

SHEET	SHEET-NO
DWG	JN25-A-131
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN25nA131d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:



N

OPERATING DECK PLAN

3/32" = 1'-0"

GENERAL PLAN NOTES:

1. -

FLOOR PLAN KEY NOTES:

KEY NOTE REFERENCE #

1. INTERIOR REMOVABLE GUARD POST: CENTER (4) BOLLARDS @ INSIDE OF COILING DOOR, 8" SCHED. 40 STEEL PIPE w/ TOP CLOSURE, STEEL SLEEVE IN CONCRETE FLOOR & PLUG CAP @ SLEEVE, PAINT (5628)
2. STEEL GUARD POST EACH SIDE OF DOOR , TOTAL OF (4), PAINT
   (5626) INTERIOR NON-REMOVABLE GUARD POST
   (5627) EXTERIOR GUARD POST
3. (2) CENTER GUARD POSTS AT EXTERIOR OF COILING DOOR. PROVIDE ONLY SLEEVE AND COVER. DO NOT PROVIDE POSTS IN CONTRACT. SEE DETAIL (5628) FOR SLEEVE, CAP & DRAINAGE REQUIREMENTS
4. WALL MOUNTED LADDER TO ROOF HATCH ACCESS VIA LANDING PLATFORM, SEE DRAWING JN25-S-202 FOR LADDER AND PLATFORM REQUIREMENTS.

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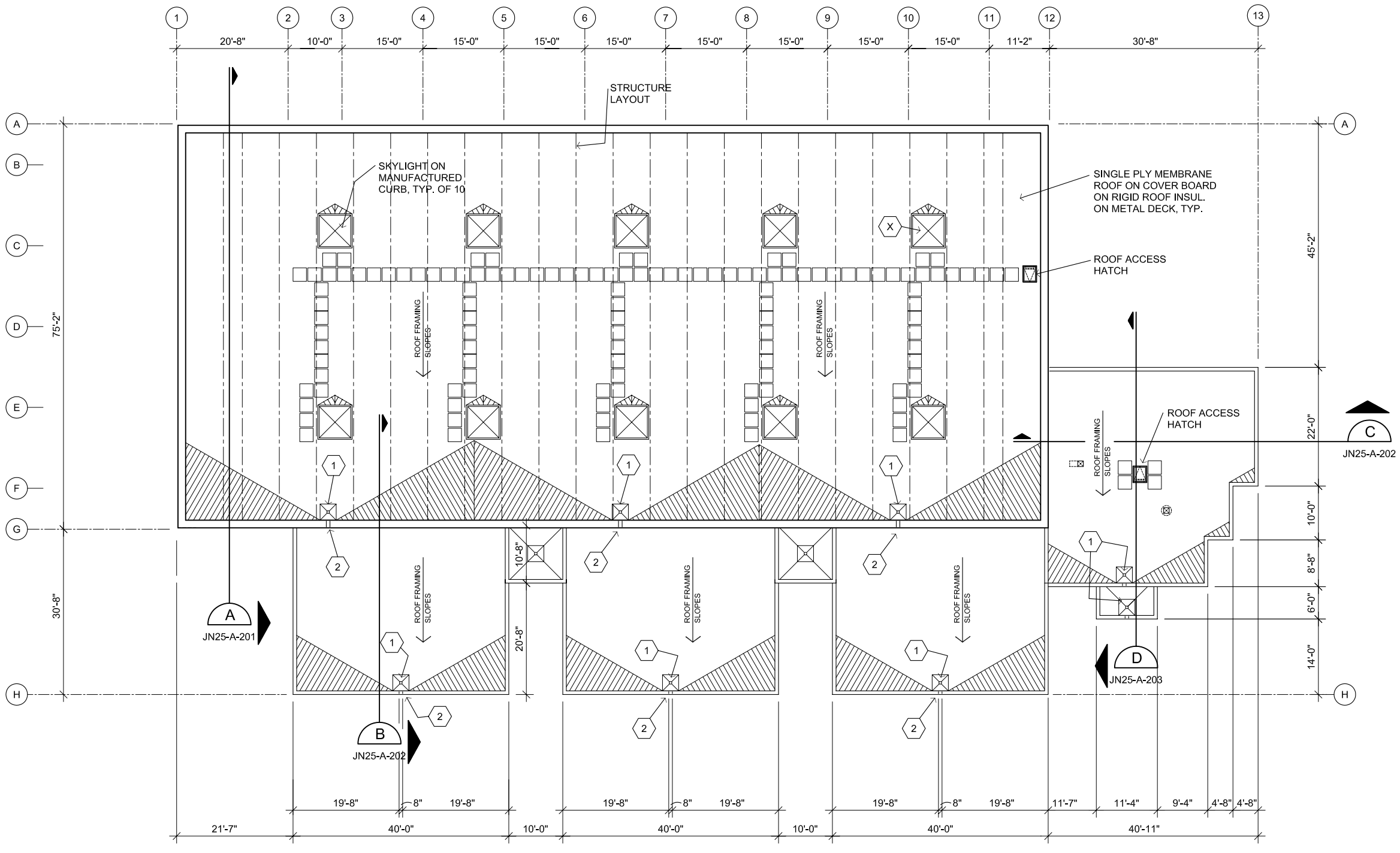
ARCHITECTURAL
JUNIPER PUMP STATION
PUMP BUILDING
OPERATING DECK PLAN

SHEET	SHEET-NO
DWG	JN25-A-141
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN25nA141d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:



N

ROOF PLAN

3/32" = 1'-0"

GENERAL ROOF PLAN NOTES:

1. ROOF INSULATION THICKNESS' ARE SHOWN ON THE ROOF PLAN AS (+ NUMBER OF INCHES). THIS IS A THICKNESS ABOVE THE ROOF DECK. THE NUMBER OF INCHES DOES NOT INCLUDE THE THICKNESS OF THE COVER BOARD.
2. ALL INSULATION SHOWN AS +3" OVER THE SLOPED ROOF STRUCTURE IS MADE UP OF (2) LAYERS OF 1 1/2" THICK INSULATION. SEE SPEC. FOR STAGGER REQUIREMENTS.
3. CONTRACTOR TO FLASH ALL CONDUIT AND SIMILAR PIPE PENETRATIONS THROUGH THE ROOF PER THE ROOF MANUFACTURER'S STANDARD DETAILS.

ROOF PLAN KEY NOTES:

KEY NOTE REFERENCE #

1. INSTALL ROOF DRAIN IN 3'-0" SQUARE SUMP. SEE PLUMBING FOR ROOF DRAIN SIZE AND SPECIFICATION REQUIREMENTS. SEE DETAIL X/J-A-X FOR SUMP AND DRAIN INSTALLATION REQUIREMENTS.
2. OVERFLOW SCUPPER IN WALL AS DIMENSIONED. SEE BUILDING ELEVATIONS FOR HEIGHT ABOVE FINISH FLOOR.
3. EXHAUST FAN ON MANUFACTURED CURB. SEE DETAIL X/J-A-X. MANUFACTURED CURB PROVIDED IN WORK OF SPECIFICATION SECTION 07700.

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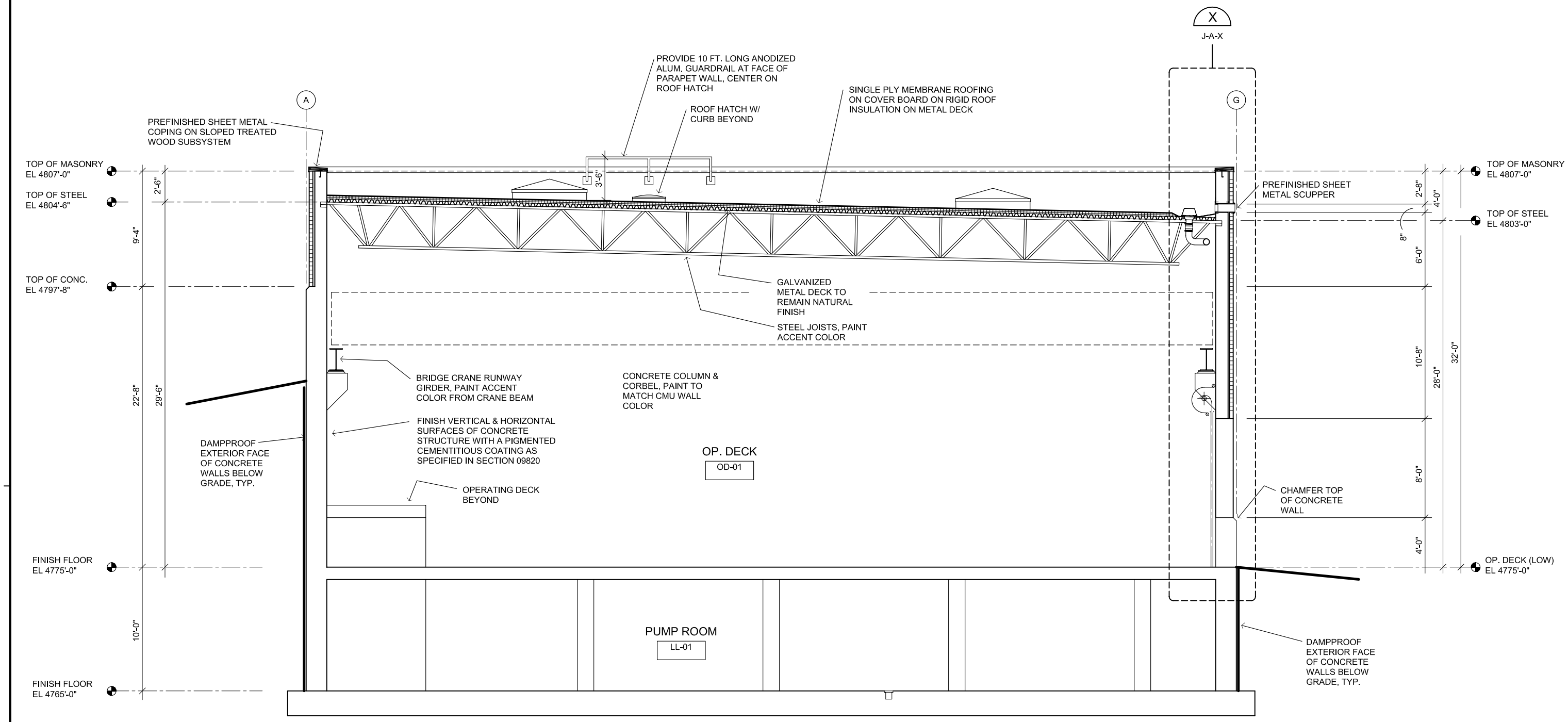
JUNIPER PUMP STATION

ARCHITECTURAL
JUNIPER PUMP STATION
PUMP BUILDING
ROOF PLAN

SHEET	SHEET-NO
DWG	JN25-A-151
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN25nA202d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:



BUILDING SECTION

A

1/4" = 1'-0"

JN25-A-131
JN25-A-141
JN25-A-151

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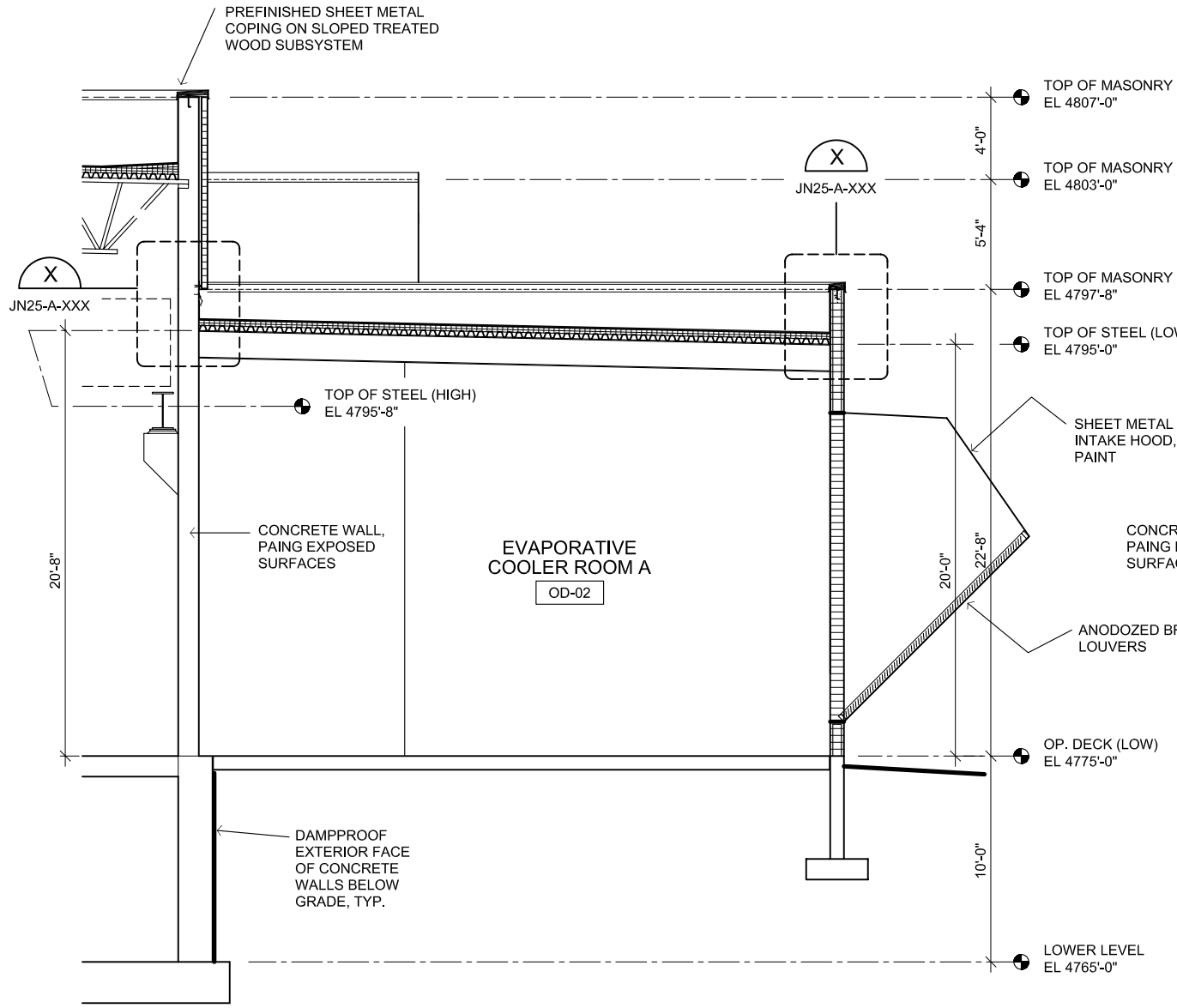
SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
WILLIAMS CREEK PUMP STATION

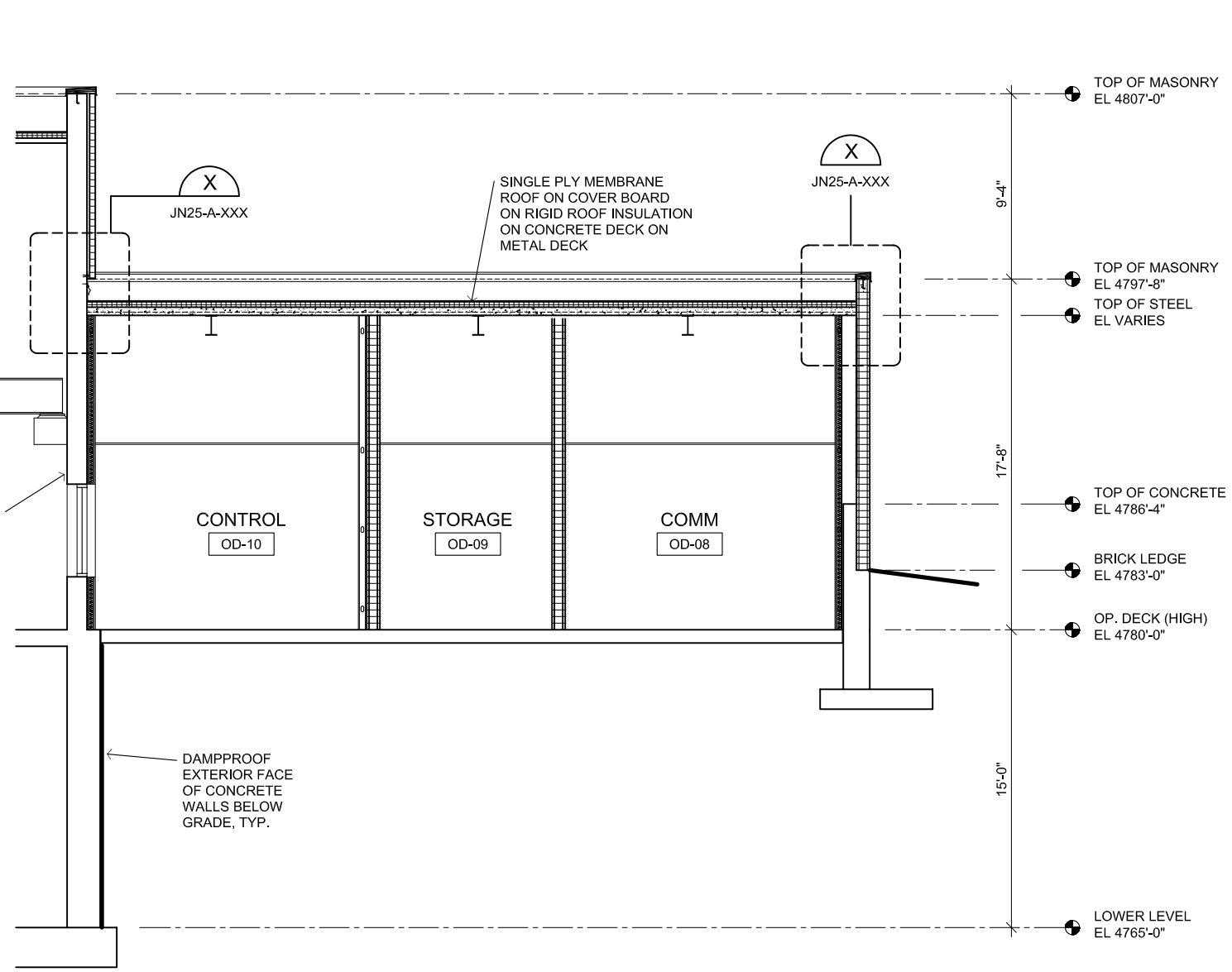
ARCHITECTURAL
JUNIPER PUMP STATION
PUMP BUILDING
BUILDING SECTION

SHEET	SHEET-NO
DWG	JN25-A-201
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN25nA202d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:



BUILDING SECTION B
1/4" = 1'-0"
JN25-A-131
JN25-A-141
JN25-A-151



BUILDING SECTION C
1/4" = 1'-0"
JN25-A-131
JN25-A-141
JN25-A-151

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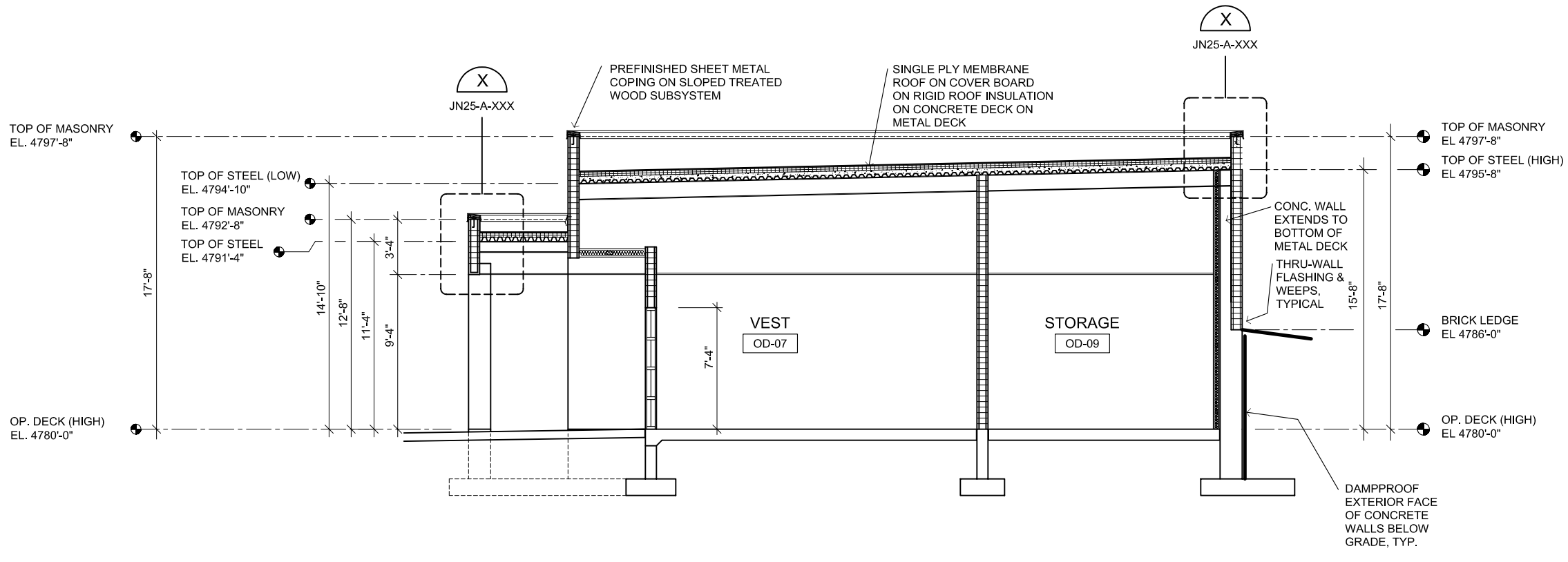
SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
WILLIAMS CREEK PUMP STATION

ARCHITECTURAL
JUNIPER PUMP STATION
PUMP BUILDING
BUILDING SECTIONS

SHEET	SHEET-NO
DWG	JN25-A-202
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN25nA202d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:



BUILDING SECTION (D)

1/4" = 1'-0"

JN25-A-131
JN25-A-141
JN25-A-151

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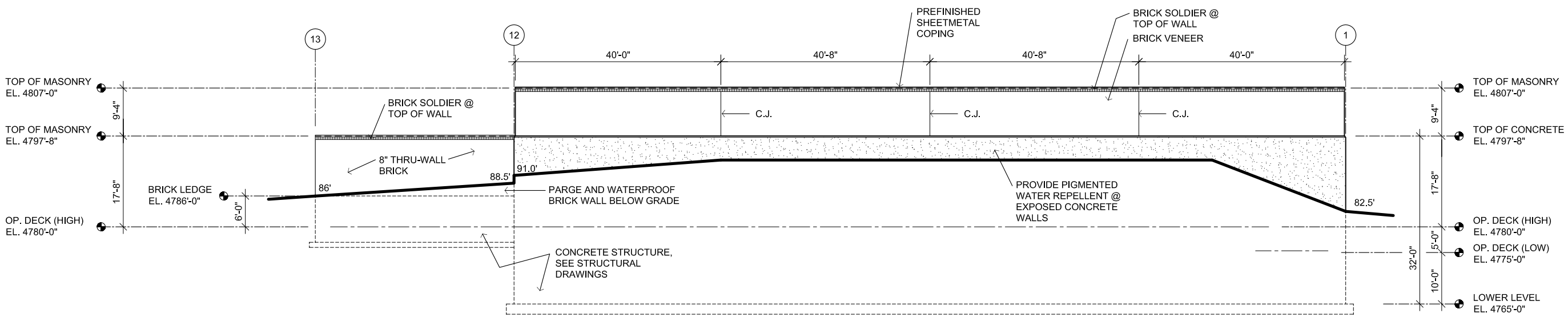
SOUTHERN DELIVERY SYSTEM
WILLIAMS CREEK PUMP STATION

ARCHITECTURAL
JUNIPER PUMP STATION
PUMP BUILDING
BUILDING SECTION

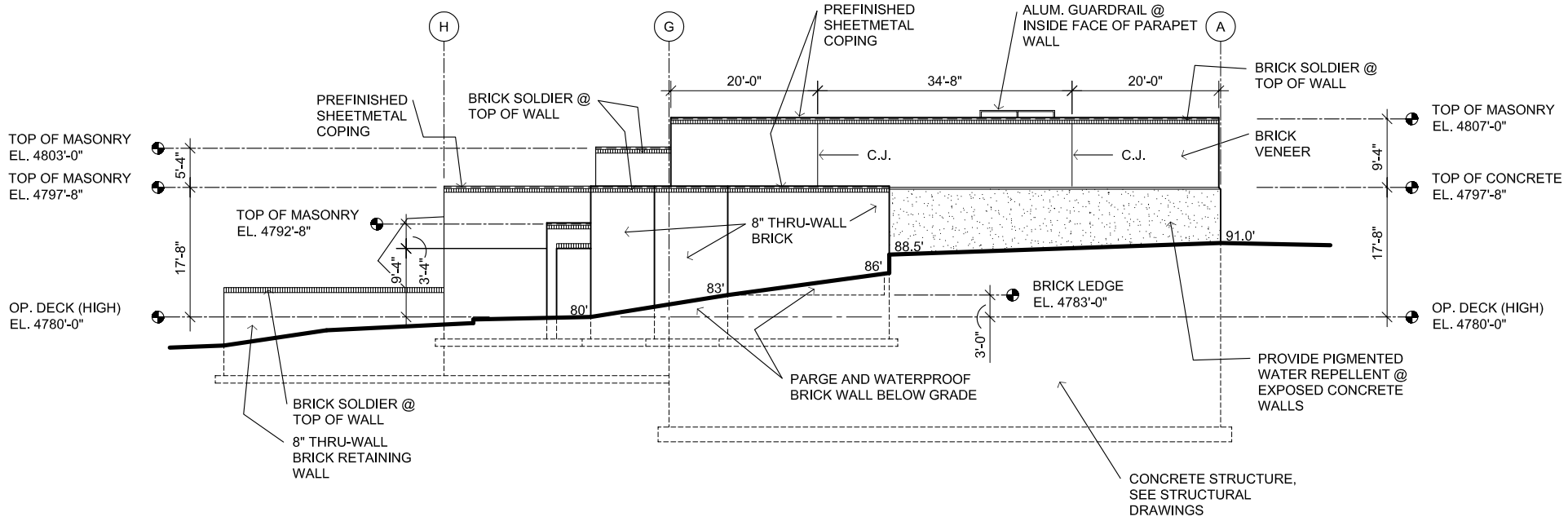
SHEET	SHEET-NO
DWG	JN25-A-203
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN25nA203d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:



EAST ELEVATION

SCALE: 3/32" = 1'-0"



SOUTH ELEVATION

SCALE: 3/32" = 1'-0"

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PRELIMINARY

DSGN	B. LINTJER
DR	B. LINTJER
CHK	B. HAYWOOD
APVD	KMH / BJS

NO.	DATE	REVISION	BY	APVD

VERIFY SCALE
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LINTJER + HAYWOOD ARCHITECTS

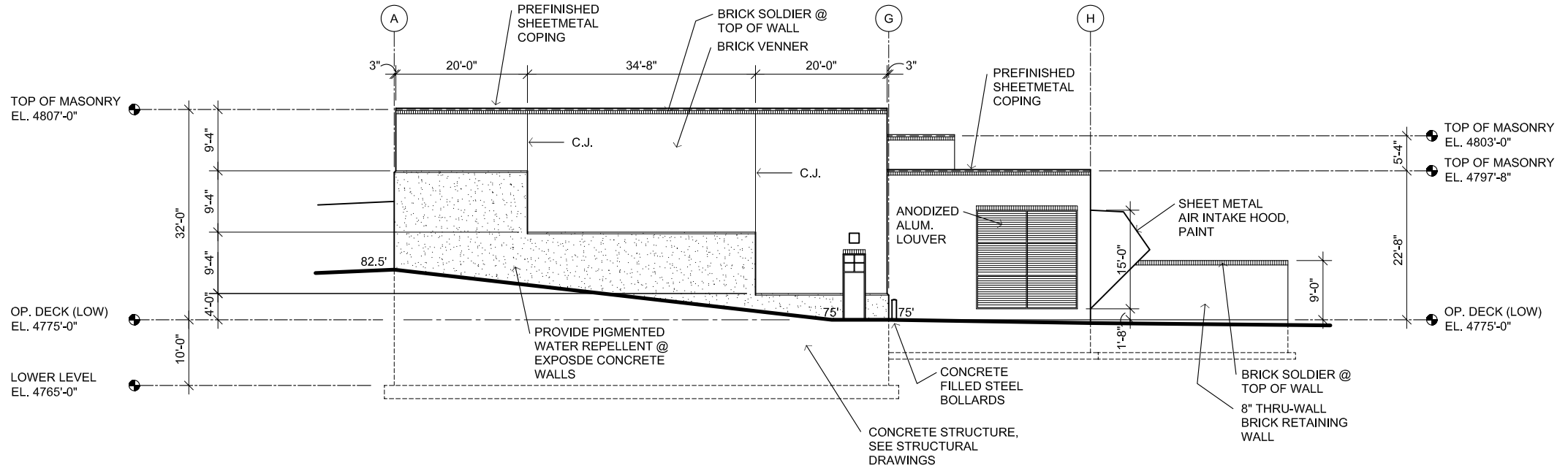
SDS Southern Delivery System

SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

ARCHITECTURAL
JUNIPER PUMP STATION
PUMP BUILDING
BUILDING ELEVATIONS

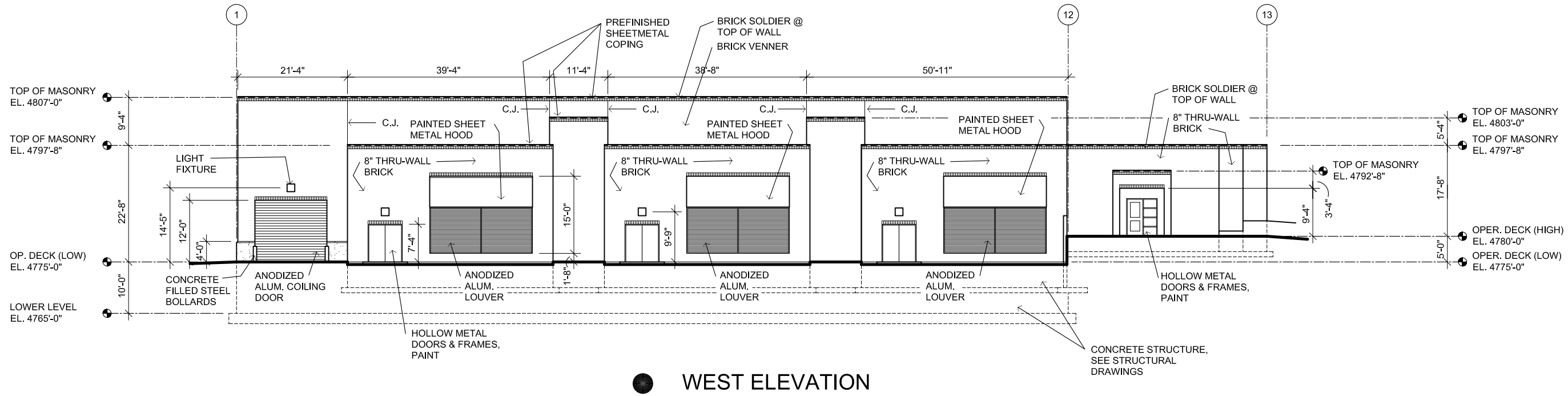
SHEET	SHEET-NO
DWG	JN25-A-301
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN25nA301d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:



NORTH ELEVATION

SCALE: 3/32" = 1'-0"



WEST ELEVATION

SCALE: 3/32" = 1'-0"

PRELIMINARY

DSGN	B. LINTJER						VERIFY SCALE
DR	B. LINTJER						BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHK	B. HAYWOOD						
APVD	KMH / BJS	NO.	DATE	REVISION	BY	APVD	

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SOUTHERN DELIVERY SYSTEM
JUNIPER PUMP STATION

ARCHITECTURAL
JUNIPER PUMP STATION
PUMP BUILDING
BUILDING ELEVATIONS

SHEET	SHEET-NO
DWG	JN25-A-302
DATE	FEB 2006
PROJ	171473.JN

CSU Project Number: SDS-002 CSU Work Order Number: 1213275 FILENAME: JN25nA302d_171473.dwg PLOT DATE: 2-17-2006 PLOT TIME:

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SOUTHERN DELIVERY SYSTEM
WILLIAMS CREEK PUMP STATION

EXAMPLE SPECIFICATIONS

DECEMBER 2004

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