

Stormwater Management Plan
SOUTHERN DELIVERY SYSTEM

Raw Water Pipeline
South Section Three (S3)

Colorado Springs Utilities

Location of Construction Site:

North of Pueblo West to the Pueblo County/
El Paso County Line
Pueblo County, CO
Sec. 5, 8, 17, 20, 29, 32, T18S, R65W
Sec. 5, 8, T19S, R65W

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Foreword

This Stormwater Management Plan (SWMP) identifies potential sources of pollution (including sediment) which may reasonably be expected to affect the quality of stormwater discharges associated with the construction of the Raw Water Work Package South Section 3 (S3) portions of the Southern Delivery System (SDS) Project. In addition, the plan describes and ensures the implementation of Best Management Practices (BMPs) which will be used to reduce pollutants in stormwater discharges associated with construction activity. The BMPs will be implemented before construction and grading begins.

Colorado Springs Utilities and Contractor personnel will be familiar with this plan and its contents prior to initiating construction on the project. A copy of this document will be kept on site at all times.

Project Description

Site Description

The S3 project area is located within Pueblo County, Colorado, beginning at the north end of Pueblo West and ending at the Pueblo County / El Paso County line. The pipeline will parallel an existing Fountain Valley Authority (FVA) easement for approximately 2,640 feet until the FVA easement turns in a northwest direction towards a FVA Pump Station. The pipeline then parallels an existing Xcel Energy overhead electrical easement for approximately 4.8 miles before reaching the Midway Ranches residential subdivision. The majority of the construction area is located within privately owned lands primarily composed of grasses and weeds. In some areas, in-street and open-cut construction will occur where S3 passes through private roadways within the Midway Ranches Subdivision. These roads include Antelope Road, Pronghorn Road, and Salt Cedar Road. The entire project area is relatively flat with intermittent drainages interspersed throughout the project area. The S3 project will cross the Steele Hollow drainageway in the central portion of the work package alignment. Construction in this area will be open-cut and will require special stabilization after construction is complete. Final design of this area is not yet complete, therefore specific stabilization measures have not been identified at this time. Upon completion of the Steele Hollow crossing design, the SWMP will be updated as necessary to address BMPs and final stabilization measures that will be taken in that area.

Description of the Construction Activity

Colorado Springs Utilities has received approval to construct the SDS Project from various regulatory agencies. The SDS Project will provide future water needs through 2046 to the City of Colorado Springs, City of Fountain, Security Water District, and the Pueblo West Metropolitan District (the SDS Participants). The entire water conveyance system will run from the Pueblo Reservoir Dam to the City of Colorado Springs.

S3 consists of the installation of approximately 7.59 miles of 66-inch diameter welded steel pipeline (see **Exhibit A**). Construction of S3 is scheduled to commence in late-2011.

Phasing and Sequencing of Major Activities

The work limits will be cleared and grubbed of obstructions and vegetation such as brush, logs, and stumps to prepare a level working surface. Examples of pipeline construction equipment that may be used during pipeline construction generally includes trucks, loaders, graders, excavators, backhoes, trenchers, side-booms, welding and testing supplies, and pickups. Trench spoil will be temporarily excavated and stockpiled to one-side of the trench.

Topsoil will be salvaged before trenching and stockpiled within the work limits. Salvaging of topsoil will be used to assist in the final revegetation and stabilization process at the completion of the pipeline construction activities.

The standard open cut construction method will be used to install the pipeline segments. This work consists of clearing, trenching, pipe installation, welding, weld testing, interior joint lining, exterior joint coating, backfilling, compacting, hydrostatic testing for leakage, cleanup, and restoration.

Imported granular material and controlled low strength material (CLSM, or flowfill) will be used for pipe bedding and pipe zone backfill depending upon local soil conditions in the trench. Native material from excavations will be used as trench backfill above the pipe zone. Compaction will meet the requirements defined in the specifications.

Grading may be performed if necessary to level the ground surface to permit transit and operation of vehicles and equipment, but surface grades will be generally restored to pre-project contours at the end of construction.

Stage 1: Pre-Construction

Stormwater runoff from the site is at undeveloped levels. From field observations, erosion is minimal from the existing vegetative cover. Initial erosion control facilities will be installed at the pre-construction stage. Site perimeter erosion controls, such as silt fence and compacted soil berms, will be placed down-gradient of the work limits to prevent sediment runoff. Construction entrances will be installed to reduce or prevent material from being transmitted to and from paved surfaces. Rock check dams will be constructed where indicated on the drawings included in **Exhibit A**.

Duration of this phase is anticipated to be 1 to 2 weeks, but may be impacted by construction phasing.

Stage 2: Clearing and Grubbing

Clearing and grubbing will be performed within the project work limits to non-paved/improved surfaces. There are no large trees in the project corridor. Existing topsoil will be excavated, temporarily stockpiled, and protected from erosion as appropriate for use in later re-establishing permanent vegetation.

BMPs will be implemented prior to clearing and grubbing. Typical BMPs are included in **Exhibit A**.

Duration of this phase is anticipated to be 2 to 4 weeks, but may be impacted by construction phasing.

Stage 3: Active Construction

Trenching will be performed with equipment such as excavators, backhoes, loaders, or similar equipment. Trenching activities will be performed in accordance with the construction documents and standard engineering practices. The trench will be excavated to sufficient depth to provide adequate cover over the pipeline and to a width between 8.5 and 10 feet wide and sloped as required for safety. The spoil bank from the trenching operations will be maintained free of foreign materials. Where the pipeline crosses public roadways, a trench crossing will be constructed.

A temporary dedicated controlled low strength material (CLSM) batch plant will be utilized within the construction staging area in the northern portion of the S3 project area during construction. The CLSM produced with the batch plant will be used as a backfill material associated with the pipeline installation process. Permits including a CDPHE Air Pollution Emission Notice (APEN) and Construction Permit for Concrete Batching Plants, and a Pueblo County Special Use Permit for Concrete Batch Plants, will be obtained prior to operation of the plant equipment.

Backfilling of the trench will be performed using appropriate methods to minimize impacts to the right-of-way and to minimize soil disturbance. When backfilling on hillsides or sloping ground, furrows or terraces may be constructed across the pipeline trench to direct the flow of water into natural drainages. Existing drainage ditches will be maintained and left unobstructed to prevent the ponding of water against the spoil bank or backfill crown.

Interim erosion control facilities will be installed as construction progresses. Identified BMPs for stormwater pollution prevention are discussed further below.

Duration of this phase is anticipated to be up to 12 months, but may be impacted by construction phasing.

Stage 4: Site Stabilization

Permanent erosion control measures will be installed immediately after substantial completion of pipeline installation. Disturbed areas will be seeded and mulched. Once all areas of the site are stabilized via seeding and mulching, temporary sediment control measures will be removed from the site. The post-construction stormwater management measures, including seeding and mulching, will be installed at the end of the construction process to control stormwater discharges after construction operations have been completed. These facilities will be monitored and maintained for a period of 2 years after construction or until 90% of pre-existing vegetation has been re-established.

Duration of this phase is anticipated to be up to 2 years following active construction.

Estimates of the Total Disturbance Area

The entire area to be impacted for this portion of the project is approximately 140 acres. This includes any potential construction or staging areas outside of the work area for S3. Although not all of the disturbed area will be cleared and graded at once, up to 140 acres of ground disturbing activities may occur.

Soils Information

The surficial soils consist of shale, silty sand, lean clay, sandy lean clay, lean clay with sand, widely graded sands with clay and gravel, and clayey sand. These soils are associated with Post-Piney Creek and Piney Creek Alluvium, Older Stream Terrace Deposit, and Colluvial and Residual Bedrock Deposits.

The geology within the Steele Hollow area (approximately Sta. 1015+00), consists of colluvial and residual bedrock soils overlying Pierre Shale bedrock. The surficial soils in this area consist of clay with sand. The unnamed drainageway north of Steele Hollow, near Sta. 1043+00, consists of approximately greater than 30 feet of alluvial soils. The surficial soils consist of silty sand over sandy clay and clay with sand. The sandy soils are loose, fine to coarse-grained sands. The northern most unnamed drainageway near Sta. 1132+00 consists of colluvial and residual bedrock soils overlying Pierre Shale bedrock. The surficial soils consist of predominantly clayey sand. The sandy soils are fine to coarse grained.

Existing Vegetation Information

The S3 project area is located parallel to an existing utility easement through Pueblo County, Colorado. Several intermittent drainages cross the generally level plains of the project area.

Native uplands cover most of the project area dominated by blue grama (*Chondrosum gracile*), western wheatgrass (*Pascopyrum smithii*), galleta grass (*Hilaria jamesii*), prickly pear (*Opuntia polyacantha*) and a variety of other grasses and forbs. The tall cholla cactus (*Cylindropuntia imbricata*) is scattered throughout the grasslands with dense patches occurring on ridges and hillslopes. The southern portion of the project area consists of a salt flat with small drainage channels and flow lines showing that water occasionally (but not frequently) flows across this broad flat area. Four-wing salt brush (*Atriplex canescens*) prickly pear cactus, alkali sacaton (*Sporobolus airoides*), and a variety of other shrubs, forbs, and grasses are sparsely scattered across this salt flat. Steele Hollow and an unnamed drainage located in the central and northern portion of the S3 project area are steep-sided gullies. Salt cedar (*Tamarisk* sp.) densely cover the bottom of the gullies with an understory ranging from no vegetation to patches of western wheatgrass, blue grama, barnyard grass (*Echinochloa crus-galli*), and other herbaceous species.

Pueblo goldenweed (*Oonopsis puebloensis*) was found in the upland native shrubland salt flats at the southern end of the project area and is listed by the Colorado Natural Heritage Program as imperiled in Colorado. This species is closely related to another goldenweed, Leafy false goldenweed (*Oonopsis foliosa* subsp. *foliosa*), that also occurs in the area. One of the main characteristics distinguishing the two species is that the bracts around the flower-heads are bent backward in Pueblo goldenweed and not bent as strongly in leafy false goldenweed. Many of the

goldenweed plants were not flowering at the time the vegetation survey was completed and no determination could be made about which species an individual plant belonged to. Goldenweed often occurs in moister areas at the bottom of shallow rivulets where water had previously flowed, although it can also occur scattered across the salt flat. Only a small portion of the goldenweed population (totaling 50 plants) was found in the project area, mostly on the western edges. Larger numbers of goldenweed were found west of the project area.

Other Potential Pollution Sources

Other potential pollution sources include spills, particularly those resulting from vehicle or equipment leaks or refueling incidents. Stationary equipment and materials with an identified spill potential will be contained within secondary containment structures to prevent and contain the spill or release of materials.

Vehicles will be inspected for leaks prior to being brought on site. Construction equipment requiring maintenance that might result in the draining or leaking of fluids will be serviced only when appropriate containment measures have been installed. Details regarding refueling and site controls can be found in the project specifications Section 01 57 22 – Temporary Stormwater Pollution, Erosion and Sediment Control.

Designated containers will be provided to facilitate the regular disposal of garbage, rubbish, construction wastes, and other waste. The trash containers will be maintained during construction. No wastes or imported materials will be buried or dumped on site.

Increased levels of dust/particulates may be generated by the construction activities associated with this site. Fugitive dust emissions resulting from construction activities will be regulated under the Colorado Department of Public Health and Environment's (CDPHE) Land Development General Construction Permit. The Contractor will take appropriate measures on site to control the level of fugitive dust emissions associated with the project.

Details regarding the control of noxious weeds on site can be found in the Project Specifications Section 01 57 17 – Temporary Weed Control.

Material Handling and Spill Response Information

The Contractor will prepare a Spill Response plan for the project prior to construction commencing. The discharge of hazardous substances or oil in stormwater discharges from the construction site must be prevented or minimized in accordance with the Contractor's Spill Response plan. Details regarding the fueling of vehicles or transfer of fuels are described in **Attachment #1**.

Appropriate containment will be installed to protect chemicals, paints, solvents, fuel, lubricating oils, and other potentially toxic or hazardous materials from stormwater runoff. Spills of liquid or dry materials that have occurred will be promptly cleaned up. Spills of toxic or hazardous material at or above reportable quantities will be reported to the appropriate federal, state, or local government agency.

Hazardous materials or products will be properly contained and disposed of in accordance with applicable laws, rules, and regulations. No wastes or imported materials will be buried, dumped, or discharged to Waters of the U.S.

Other Controls

The following control measures and good housekeeping practices may be implemented to prevent or minimize potentially-polluting construction materials from contact with stormwater:

- Construction areas and unpaved roads will be sprayed with water or tackifier, as needed, to reduce the effects of wind erosion and to control fugitive dust. Conditions will be monitored throughout construction and these areas will be re-sprayed, as needed;
- If any measurable quantity of sediment is discharged from the construction area as a result of structural failure or lack of designed capacity of temporary erosion control measures, the sediment will be cleaned up as soon as practicable and replaced within the right-of-way, easement or work limits, or properly disposed of in a manner approved by the general permit;
- Construction equipment and vehicles will be inspected for leaks, and necessary repairs will be made before returning the equipment to service. Equipment will be cleaned and inspected and no leaking equipment will be allowed on the worksite, including staging areas;
- Wash-down areas protected from stormwater runoff will be provided for construction equipment and vehicle cleanup;
- Regular disposal of garbage, rubbish, construction wastes, and sanitary waste will be maintained at all times during construction;
- Portable chemical toilets will be provided by Contractor at the staging area. Sanitary waste will be collected and removed for disposal at regular intervals to an appropriate licensed sewage disposal facility. No sewage will be buried, dumped or discharged to Waters of the U.S.

Non-Stormwater Discharges

Construction trench dewatering and hydrostatic test dewatering are the only identified potential non-stormwater discharges that are anticipated to occur on the project area during construction. These discharges will be permitted under the appropriate CDPHE permit(s) as needed.

Receiving water(s)

The nearest receiving water is Steele Hollow which is crossed by the pipeline project. There are two other smaller unnamed drainageways north of Steele Hollow. No discharge will go to municipal storm sewers. The ultimate receiving water is Fountain Creek, which discharges to the Arkansas River.

Site Map(s)

Site maps (Key Plans) and erosion control plan drawings are included in **Exhibit A**. These maps and drawings show the general location of S3 and the specific types and locations of stormwater BMPs.

BMPs for Stormwater Pollution Prevention

Erosion and Sediment Controls

Erosion controls limit the amount and rate of erosion occurring on disturbed sites. Sediment controls are generally designed to retain sediment on-site to the extent feasible. During construction, BMPs will be employed as identified on the maps and drawings associated with this SWMP (**Exhibit A**) and as deemed necessary to reduce erosion and control sediment on the disturbed areas.

The Contractor will designate a SWMP Plan Administrator and that person will be responsible for ensuring that appropriate control measures are installed and maintained in all areas. The SWMP Plan Administrator will maintain status reports and appropriate records for compliance with permit requirements imposed by federal, state, or local agencies.

Control measures will be properly selected, installed, and maintained in accordance with relevant manufacturer specifications and good engineering practices to control the effects of erosion caused by stormwater runoff. In most cases, a combination of vegetative, structural, and stormwater management practices are used to control erosion and transport of sediment.

Selection of appropriate erosion control materials will be based on soil properties, steepness of the slope, and anticipated surface flow or runoff. In general, wattles and/or silt fence will be the appropriate control measures to be used for sediment and erosion control during construction in the vicinity of drainage crossings or adjacent to roadways. As conditions require, other control measures may be considered. As site and weather conditions vary throughout the project, these decisions will be made on a site specific basis.

Temporary BMPs will be removed during finalization of the project.

Structural Practices

Silt Fencing

Silt fence is a temporary sediment barrier made of woven, synthetic fabric supported by wood or metal posts. The bottom portion of the silt fence should be trenched in and compacted, as shown on the technical drawing in **Exhibit A**, so that fencing filter fabric is buried and cannot be easily pulled out by hand. Where joints are required, silt fence should be spliced together at a supporting post with appropriate overlap and securely sealed.

Silt fence guidance, installation techniques, and locations can be found in **Exhibit A**.

Continuous Berm

Continuous berms are temporary sediment barriers consisting of compacted in situ soil berms and sediment control logs. The compacted in situ soil berms are 18-inches high and generally consist of a ridge of compacted soil which intercepts and diverts runoff from construction areas. Berms intercept flow from the construction area and direct it to temporary slope drains or to outlets where it can be safely discharged. They are used to direct or divert runoff flows, or as

barriers to collect and store runoff. Sediment control logs are 100% biodegradable and installed at minimum 200-foot increments to allow flow through the continuous berm. The sediment control logs are embedded in a 2-inch trench and staked per the manufacturer's recommendations. The sediment control logs are 20-inches nominal diameter.

Continuous berm details and locations can be found in **Exhibit A**.

Construction Entrances

Temporary gravel or paved construction entrances to paved roads will be installed at access points to paved public roadways to prevent or minimize tracking of mud, dirt, sediment, or similar materials onto the roadway. Deposits that have been tracked by vehicles or have been transported off the right-of-way by wind or stormwater will be promptly cleaned up.

Construction entrance guidance, installation techniques, and locations can be found in **Exhibit A**.

Straw Bales

A straw bale barrier is a linear wall of straw bales designed to intercept sheet flow and trap sediment before runoff exits a disturbed area. All straw bales must be certified as weed free. Straw bale barriers should not be used in areas where ponding is not desirable. Staking of bales is required and stakes should be driven into the ground at the spacing and depth indicated on the technical drawing in **Exhibit A**. Sediment accumulated behind the bale should be removed when the sediment reaches one-quarter of the bale height. Bales should be checked for degrading and replaced as necessary.

Straw bale guidance, installation techniques, and locations can be found in **Exhibit A**.

Rock Check Dam

A check dam is a rock dam that is constructed in a drainage swale to reduce flow velocities in order to minimize erosion. Detailed installation instructions and the sizing of riprap required for check dams are located on the technical drawings in **Exhibit A**. Sediment accumulated upstream of check dams should be removed when the sediment depth upstream of the check dam is within half of the height of the crest or when debris accumulation compromises the effectiveness of the feature.

Check dam guidance, installation techniques, and locations can be found in **Exhibit A**.

Erosion Control Blankets

An erosion control blanket is a fibrous mat of straw, excelsior, or coconut material trenched in and staked down over prepared soil and/or seedbed. The matting serves to stabilize disturbed areas by promoting vegetative growth and reducing both wind and water erosion. All erosion control blankets and netting should be made of 100% natural and biodegradable, weed free material. Blankets should be oriented correctly, with seams and secured with staples, stakes, or

pins as indicated in **Exhibit A** and the manufacturer's specs. Erosion control blankets should be used on slopes greater than 33%.

As currently planned, no erosion control blankets are planned to be used for the construction of S3. However, should erosion control blankets be necessary due to potentially changing site conditions and/or contractor preference, guidance and installation techniques can be found in **Exhibit A**.

Rock Socks

A rock sock is constructed of gravel that has been wrapped by wire mesh or a geotextile to form an elongated cylindrical filter. Rock socks are intended to trap sediment from stormwater runoff that flows onto roadways as a result of construction activities.

Rock socks are susceptible to displacement and breaking due to vehicle traffic. Inspect rock socks for damage and repair or replace as necessary. Remove sediment by sweeping or vacuuming as needed to maintain the functionality of the BMP, typically when sediment has accumulated behind the rock sock to one-half of the sock's height. Installation instructions are located on the technical drawings in **Exhibit A**.

Concrete Washout Area

Concrete washout areas are excavated depressions used to contain waste concrete and/or concrete wash water. The containment area will be excavated and constructed as indicated in **Exhibit A**. The excavated material will be used to construct berms around the containment area. The location of the concrete washout area will be clearly marked and a ramp or construction entrance will be installed at the entrance to the washout area.

The containment area will be cleaned out once it is 2/3 full or as necessary to maintain capacity for waste concrete. At the end of construction, concrete will be removed from the containment area and properly disposed of at an approved waste disposal location. The excavated area will be backfilled and reclaimed per landowner or agency requirements. Concrete wash water shall not be discharged to or allowed to runoff to Waters of the U.S., including surface or subsurface storm drainage systems or facilities.

Concrete washout area guidance, installation techniques, and locations can be found in **Exhibit A**.

Non-Structural Practices

Minimizing the area being disturbed at any given time is one of the most effective erosion control measures available. Therefore, during clearing and construction activities, efforts will be made to preserve existing vegetation by clearing the construction area to a minimum width that is necessary for safe and efficient construction. Before any other BMPs are to be installed, the limits of the construction area will be clearly identified via silt fence where required, orange safety fence or other appropriate markings to preserve existing vegetation.

SWMP Revision Procedures

Typically, some BMPs will have to be added or modified to adapt to changing environmental conditions and construction phases. The Contractor's SWMP Administrator shall determine the changes needed to reflect actual field conditions. In some cases, BMPs may need to be rebuilt, replaced, moved, or added. Changes will be addressed with the CDPHE, as applicable. This plan must be revised when/if changes are necessary in accordance with the Colorado Discharge Permit System (CDPS) General Permit for Stormwater Discharges Associated with Construction Activity (Permit No. COR-030000).

Final Stabilization and Long-term Stormwater Management

After construction activities have been completed, the areas where soil has been disturbed will be restored as close to pre-construction grade, contours, compaction, and other conditions as possible. Stabilization measures, including seeding and mulching, will be implemented after final grade has been reached. Final stabilization and permanent seeding will be the responsibility of the Programs' Revegetation Contractor. The Revegetation Contractor will use an approved seed mix that is appropriate for the specific project area. The following permanent seed mixes will be used for S3:

Native shortgrass seed mix

Common Name, Variety	Scientific Name	Lbs PLS/ Acre*	% Lbs PLS
Galleta grass, Viva	<i>Hilaria (Pleuraphis) jamesii</i>	4	35
Blue grama, Hachita	<i>Bouteloua gracilis</i>	0.8	5
Vine mesquite	<i>Panicum obtusum</i>	1.5	15
Sideoats grama, Vaughn	<i>Bouteloua curtipendula</i>	3	25
Alkali sacaton, Salado	<i>Sporobolus airoides</i>	0.4	5
Western wheatgrass, Walsh	<i>Pascopyrum smithii</i>	2	15
Totals		11.7	100

*Seeding rate is for drill seeding. If the seed is broadcast, double the rate.

Native seed mix for sandy areas.

Common Name, Variety	Scientific Name	Lbs PLS/ Acre*	% Lbs PLS
Blue grama, Alma	<i>Bouteloua gracilis</i>	0.6	5.61
Sand dropseed	<i>Sporobolus cryptandrus</i>	0.1	0.93
Little bluestem, Pastura	<i>Schizachyrium scoparium</i>	2	18.69
Slender wheatgrass, native	<i>Elymus trachycaulus</i>	2	18.69
Switchgrass, Nebraska 28	<i>Panicum virgatum</i>	1.5	14.02
Western wheatgrass, Barton	<i>Pascopyrum smithii</i>	2.5	23.36
Sideoats grama, El Reno	<i>Bouteloua curtipendula</i>	2	18.69
Total		10.7	100.00

*Seeding rate is for drill seeding. If the seed is broadcast, double the rate.

No solid waste, trash, or vegetative debris will be buried onsite. As final cleanup is completed, appropriate tillage will be conducted on all areas occupied during construction in order to relieve soil compaction. Compacted areas will be decompacted with a scarifier prior to topsoil replacement and seeding.

Temporary seeding will be completed within 30 days of initial soil exposure or 7 days after grading is substantially completed. Permanent seeding and planting of disturbed areas will be conducted during the first normal period of favorable seeding and planting conditions after final preparation for seeding and planting.

Final stabilization will be defined to have occurred when surface disturbing activities have been completed and a uniform vegetative cover has been established with an individual plant density of 90% of pre-disturbance levels.

Inspections, Maintenance, and Recordkeeping

During use of the site, the Contractor's SWMP Administrator shall inspect disturbed areas and BMPs. At a minimum, inspections will be conducted once every 14 calendar days and within 24 hours after the end of any precipitation or snow melt event that causes surface erosion. After final clean up of the site, inspection will continue as necessary until the project area is stable and BMPs have been removed.

Inspections will include disturbed areas of the site and areas used for storage of materials that are exposed to precipitation. Inspectors must look for evidence of, or the potential for, pollutants entering the stormwater conveyance system. Sediment and erosion control measures identified in the plan must be observed to ensure proper operation.

Sediment will be removed from sediment traps when capacity of control is reduced by 50 percent. Rock will be added where thickness of the construction entrance is reduced. BMPs will be replaced or rebuilt once they are observed to be nonfunctional, generally within 24 hours.

An inspection report will be prepared and signed by the Contractor's SWMP Administrator following each inspection and will be certified in accordance with permit requirements. This report must include any spills, leaks, or overflows that may have resulted in a discharge of pollutants. The reports will include information on any corrective actions taken to prevent further incidents, and a description detailing any environmental impact that may have occurred. Inspection forms will be kept on site at all times during construction. A copy of the Inspection Form is located in **Attachment #2**.

After final stabilization of the site and it has been determined that the project area has regained 90% of the background cover, a Notice of Termination (NOT) can be filed for appropriate state permits. Copies of records and information resulting from monitoring activities required by this permit will be retained by Colorado Springs Utilities for a minimum of 3 years.

ATTACHMENT #1
Directions for On-Site Fuel Transfers

This procedure should be readily available to facility personnel involved in product transfer operations or on display in the transfer areas. In order to minimize the potential for a spill during fuel transfers and to be prepared in the event of a spill, the following measures are to be followed (includes minimum DOT regulations that shall be followed during loading/unloading of fuel):

1. Keep fire away while loading/unloading. Persons in the vicinity are forbidden to smoke, light matches, or carry any flame or lighted cigar, pipe, or cigarette. 49CFR 177.834(c, d)
2. Fuel shall not be loaded/unloaded from any motor vehicle while the engine is running. The exception is when the engine of the vehicle is to be used in the operation of the pump. 49CFR 177.837(a)
3. The supply truck driver shall notify a facility representative when arriving on site.
4. The tank records shall be reviewed to determine the theoretical tank level. 7CCR 1101-14 S2-3-1 & S2-4-2(a)(2)
5. The tank level gauge will be inspected to determine the actual tank level before unloading takes place. (Note: Any tank level discrepancies will be resolved prior to hooking up to the tank.) 7CCR 1101-14 S2-3-1 & S2-4-2(a)(2)
6. The supply truck driver shall observe the transfer during the entire operation. 49CFR 177.834(i)(2)
7. Sufficient secondary containment surrounding the truck shall be available; or enough containment boom to surround the truck shall be available in the immediate area.
8. Once the truck is in position, its emergency brake will be applied and reasonable precautions will be taken to prevent motion of the truck during unloading. 49CFR 177.834(e) (Example – utilize wheel chocks when parked on an incline.)
9. Signs must be posted that remind drivers **NOT** to pull away before detaching hoses. 40CFR 112.7(h)(3)
10. Containers and cargo tanks shall be grounded prior to and during transfer. 49CFR 177.837(b) & (c)
11. All outlets to the vehicle and tank and the transfer line shall be checked for leakage. Any problems shall be fixed prior to hooking up any lines.
12. A drip pan shall be placed under the outlet of the fuel truck transfer line.
13. The transfer line must be properly engaged at each end before opening any valves.
14. Checks for leaks must be conducted after starting the transfer. Any leaks must be corrected before continuing the transfer.
15. All valving must be properly shut off prior to disengaging the transfer line.
16. The transfer line must be properly disengaged and the valves and piping of both the tank and truck must be checked for leaks before allowing the truck to leave the site. (40CFR 112.7 h(4) for trucks)
17. In the event of a spill, immediately shut down the transfer system and contact the supervisor in charge (call 911, as needed).

ATTACHMENT #2
STORMWATER MANAGEMENT INSPECTION FOR LOCATION
BI-WEEKLY INSPECTION LOG

Complete this inspection every 14 days and after any precipitation event that may have resulted in an erosion problem. Keep the original in the SWMP file. Refer to the site Stormwater Management Plan (SWMP) for site specifics.

Outfall

Yes

No

- Is there a discharge from the site? _____
- Is there any evidence of oil or grease (or other) contamination? _____
(If contamination is evident, collect a water sample and investigate for the contamination source.)

Site

- General condition of the area:

- Condition of erosion control measure(s) & needed repairs or changes:

- Are there any notable erosion problems? _____
If so, are there any erosion control actions needed (describe)?

- Results of previous erosion corrective action(s):

- Any other observation of things that may result in an impact to the quality or quantity of the water discharge from this site?

Signature: _____ Date & Time: _____

Inspector: _____

EXHIBIT A

**Site Maps and Grading and Erosion Control Plan Drawings
(attached)**

GENERAL NOTES

1. STATIONING AND DISTANCES SHOWN ON THE DRAWINGS ARE BASED ON HORIZONTAL MEASUREMENTS AND EXPRESSED IN STATE PLANE GRID DISTANCES. CROSS SECTIONS, CROSSING DETAILS, AND REFERENCES TO LEFT AND RIGHT ON THE DRAWINGS ASSUME LOOKING IN THE DIRECTION OF INCREASING STATION ALONG PIPELINE ALIGNMENT.
2. UNLESS OTHERWISE NOTED, PIPE ELEVATIONS SHOWN ARE CENTERLINE ELEVATIONS.
3. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS AND IN ACCORDANCE WITH SPECIFICATION SECTION 33 05 01 02, WELDED STEEL PIPE AND FITTINGS - WELD BEFORE BACKFILL.
4. PIPELINE VERTICAL DEFLECTIONS UP TO SIX (6) DEGREES MAY BE MADE USING BEVELED END JOINTS. INDIVIDUAL BEVELED JOINT DEFLECTIONS SHALL NOT EXCEED THREE (3) DEGREES. MAINTAIN PIPE CENTERLINE AT OR BELOW ELEVATIONS SHOWN ON PLAN AND PROFILE DRAWINGS. MAINTAIN MINIMUM CLEARANCE WITH CROSSING UTILITIES.
5. THE CONSTRUCTION WORK LIMITS ARE SHOWN ON THE DRAWINGS. CONFINED CONSTRUCTION ACTIVITIES WITHIN WORK LIMITS.
6. LIMITS OF CONSTRUCTION THAT DO NOT HAVE TEMPORARY CONSTRUCTION EASEMENTS OR PERMANENT EASEMENTS OR DESIGNATED WORK LIMITS ARE LIMITED TO PUBLIC RIGHT-OF-WAY. COORDINATE/ESTABLISH CONSTRUCTION LIMITS WITH PUBLIC ENTITIES.
7. INSTALL CONSTRUCTION WORK LIMIT FENCING AS NOTED ON THE DRAWINGS OR AS DIRECTED BY CONSTRUCTION MANAGER. DO NOT INSTALL WORK LIMIT FENCING ACROSS ROAD RIGHT-OF-WAY.
8. INSTALL CONSTRUCTION WORK LIMIT FENCING 7 DAYS PRIOR TO CONSTRUCTION ACTIVITIES INCLUDING TRAVEL FROM ONE LOCATION TO ANOTHER WITHIN WORK LIMITS. PROVIDE AND MAINTAIN WORK LIMIT FENCE THROUGHOUT THE CONSTRUCTION PERIOD. OBTAIN CONSTRUCTION MANAGER'S WRITTEN PERMISSION PRIOR TO REMOVAL OF WORK LIMIT FENCING.
9. LOCATIONS OF COMBINATION AIR VALVE VAULTS, ACCESS MANWAYS, AND BLOWOFF STRUCTURES ARE SHOWN ON THE DRAWINGS. NO CHANGES IN LOCATIONS ARE ALLOWED EXCEPT AS APPROVED BY THE ENGINEER AND IN ACCORDANCE WITH SPECIFICATION SECTION 33 05 01 02 WELDED STEEL PIPE AND FITTINGS - WELD BEFORE BACKFILL.
10. PROVIDE TRENCH PLUGS WHERE SHOWN AND AS DIRECTED BY CONSTRUCTION MANAGER.

11. SUBJECT FACILITIES ARE SHOWN HEAVY LINED. SCREENING IS USED IN ORDER TO CLARIFY DRAWING. FOR EXAMPLE, STRUCTURES ARE SCREENED ON MECHANICAL DRAWINGS TO HIGHLIGHT PIPING AND EQUIPMENT.
12. INSTALL CATHODIC PROTECTION TEST STATIONS AT THE APPROXIMATE LOCATIONS SHOWN ON THE SCHEDULE LOCATED ON DWG S1-G-18, IN ACCORDANCE WITH SPECIFICATIONS, AND AS APPROVED BY CONSTRUCTION MANAGER. INSTALL ANODES AT LOCATIONS IN ACCORDANCE WITH SPECIFICATION SECTION 26 42 02, GALVANIC ANODE CATHODIC PROTECTION SYSTEM.
13. EXISTING PROPERTY LINE, RIGHT-OF-WAY AND EASEMENT INFORMATION SHOWN ON THESE DOCUMENTS WAS DEVELOPED USING LAND SURVEY PLATS PREPARED BY CRITIGEN.
14. TOPOGRAPHIC MAPPING AND PLAN VIEWS FOR DRAWINGS WERE GENERATED FROM AERIAL PHOTOGRAPHY DATED 5/18/2008.
15. PROTECT EXISTING TREES AND SHRUBS NOT DESIGNATED TO BE REMOVED.
16. PRESERVE EXISTING MONUMENTS, BENCH MARKS, RANGE TIES, PROPERTY MARKERS, REFERENCE POINTS, AND STAKES. A COLORADO LICENSED SURVEYOR IS REQUIRED TO REFERENCE, REPLACE AND REPORT ANY EXISTING LAND CORNERS, MONUMENTS, BENCHMARKS, RANGE TIES, PROPERTY MARKERS, REFERENCE POINTS, AND STAKES POTENTIALLY DISTURBED OR DESTROYED BY CONSTRUCTION.
17. REPAIR OR REPLACE EXISTING CULVERTS THAT ARE DAMAGED BY CONSTRUCTION.
18. CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO "CALL BEFORE YOU DIG" PROGRAM AT 1-800-922-1987 (OR 811) 3 BUSINESS DAYS PRIOR TO ANY EXCAVATION.
19. CONTACT UTILITY OWNERS PRIOR TO CONSTRUCTION AT UTILITY CROSSINGS IN ACCORDANCE WITH SPECIFICATION SECTION 01 31 13, PROJECT COORDINATION. PROVIDE UTILITY SUPPORT IN MANNER REQUIRED BY UTILITY OWNERS.
20. INSTALL PIPE MARKER POSTS (3305-980) ON CENTERLINE OF PIPELINE AT STRUCTURES, BURIED ACCESS MANWAYS, AT LOCATIONS NEAR FIBER OPTIC HANDHOLES, HPI'S, AT ROAD CROSSINGS, AND AT LINE OF SIGHT AS DIRECTED BY CONSTRUCTION MANAGER.
21. RETURN CONTOURS TO PRECONSTRUCTION ELEVATIONS UNLESS OTHERWISE SHOWN. NO NEW ENCLOSED DEPRESSIONS ARE ALLOWED.
22. INSTALL FIBER OPTIC CONDUIT IN ACCORDANCE WITH SPECIFICATION SECTION 40 95 80, FIBER OPTIC COMMUNICATION SUBSYSTEM.
23. VERIFY HEIGHT AND SPAN OF CROSSING OVERHEAD ELECTRIC LINES PRIOR TO CONSTRUCTION.
24. INSTALL EITHER TYPE F OR TYPE J PIPE ZONE MATERIAL EXCEPT WHERE SPECIFIC PIPE ZONE MATERIAL IS CALLED OUT ON THE DRAWINGS AND STANDARD DETAILS.
25. RESTORE OR REPLACE EXISTING FENCES AND GATES DISTURBED BY CONSTRUCTION ACTIVITIES TO A CONDITION EQUAL TO OR BETTER THAN PRECONSTRUCTION CONDITION.
26. GEOTECHNICAL INFORMATION IS NOT AVAILABLE BETWEEN STA S 1132+00 AND STA S1178+00. SOIL CONDITIONS TO BE VERIFIED DURING CONSTRUCTION. EXCAVATE TO ALLOW ENGINEER TO INSPECT SOIL DURING TRENCHING. DIMENSION BETWEEN PIPE AND PIPE ZONE TRENCH WALL MAY BE INCREASED TO 33-INCHES IF REQUIRED BY ENGINEER.
27. INSTALL PERMANENT GATES AT EXISTING FENCES FOR FUTURE ACCESS AS DIRECTED BY CONSTRUCTION MANAGER.
28. WHERE CLSM IS REQUIRED IN PIPE ZONE TO TOP OF BEDROCK, VERIFY ELEVATION OF BEDROCK PRIOR TO INSTALLATION OF PIPE. PIPE SHALL BE INSTALLED A MINIMUM OF 1 FOOT BELOW TOP OF BEDROCK, OR ELEVATIONS AS SHOWN ON DRAWINGS, WHICHEVER IS LOWER.

SURVEY CONTROL

POINT NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
CLEVENGER	1248315.200	3249105.975	5204.01	STAINLESS STEEL ROD WITH ACCESS LID STAMPED "CLEVENGER 1991"
CORRAL BLUFFS	1378767.054	3258121.280	6788.15	USCGS TRIANGULATION DISK STAMPED "CORRAL BLUFFS 1879"
PUEBLO-CBL-973	1176842.746	3266338.244	4946.93	NGS BRASS DISK STAMPED "CALBRATION BASELINE 973 1983 U.S.C."
SDS-1	1365675.811	3249458.429	6184.90	3.25" ALUMNUM CAP STAMPED "SDS 1"
SDS-2	1356851.864	3249088.332	6053.21	3.25" ALUMNUM CAP STAMPED "SDS 2"
SDS-3	1346767.071	3250590.865	5997.82	3.25" ALUMNUM CAP STAMPED "SDS 3"
SDS-4	1334963.226	3253584.921	5829.49	3.25" ALUMNUM CAP STAMPED "SDS 4"
SDS-5	1319525.733	3251004.267	5727.36	3.25" ALUMNUM CAP STAMPED "SDS 5"
SDS-6	1311290.495	3249115.118	5640.77	3.25" ALUMNUM CAP STAMPED "SDS 6"
SDS-7	1275980.612	3244487.619	5329.01	3.25" ALUMNUM CAP STAMPED "SDS 7"
SDS-8	1272438.655	3234306.298	5465.33	3.25" ALUMNUM CAP STAMPED "SDS 8"
SDS-9	1262622.927	3233038.574	5463.03	3.25" ALUMNUM CAP STAMPED "SDS 9"
SDS-10	1249942.257	3232117.619	5304.13	3.25" ALUMNUM CAP STAMPED "SDS 10"
SDS-11	1240330.711	3232286.734	5468.25	3.25" ALUMNUM CAP STAMPED "SDS 11"
SDS-12	1225582.343	3231669.126	5320.70	3.25" ALUMNUM CAP STAMPED "SDS 12"
SDS-13	1210803.056	3231935.423	5098.26	3.25" ALUMNUM CAP STAMPED "SDS 13"
SDS-14	1196341.401	3232065.878	5032.89	3.25" ALUMNUM CAP STAMPED "SDS 14"
SDS-15	1187476.811	3231961.540	4996.37	3.25" ALUMNUM CAP STAMPED "SDS 15"
SDS-16	1178196.653	3232239.942	4941.71	3.25" ALUMNUM CAP STAMPED "SDS 16"
SDS-17	1171526.900	3232244.310	4960.11	3.25" ALUMNUM CAP STAMPED "SDS 17"
SDS-18	1167871.108	3226253.994	5144.02	3.25" ALUMNUM CAP STAMPED "SDS 18"
SDS-18A	1166477.575	3229461.646	5049.15	2.5" ALUM CAP STAMPED CH2M HILL
SDS-19	1161412.073	3224324.395	4771.63	3.25" ALUMNUM CAP STAMPED "SDS 19"

SURVEY NOTES:


1. PROJECT COORDINATE SYSTEM
- | | |
|-------------------|--|
| HORIZONTAL DATUM: | NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 1986 (NAD 83/86) |
| PROJECTION: | COLORADO STATE PLANE COORDINATES, CENTRAL ZONE |
| VERTICAL DATUM: | NGVD 1929 |
| GEOID MODEL: | GEOID 03 |
| UNITS: | U.S. SURVEY FEET AT GRID |
2. THE PRIMARY PROJECT CONTROL FOR SOUTHERN DELIVERY SYSTEM WAS ESTABLISHED BY KIRKHAM MICHAEL CONSULTING ENGINEERS (KM). A SURVEY CONTROL DIAGRAM WAS PREPARED BY KM AND DEPOSITED WITH THE EL PASO COUNTY CLERK AND RECORDER OFFICE ON AUGUST 10, 2004 UNDER DEPOSIT NUMBER 900110. THE PROJECT CONTROL WAS ACCEPTED BY CH2M HILL AND UTILIZED TO ESTABLISH ADDITIONAL SURVEY CONTROL USING STATIC AND FAST STATIC SURVEY TECHNIQUES.
3. COORDINATES ARE "GRID" VALUES.
4. SOUTHERN DELIVERY SYSTEM SURVEY CONTROL LISTED MAY NOT APPEAR ON THE PLAN SHEETS.

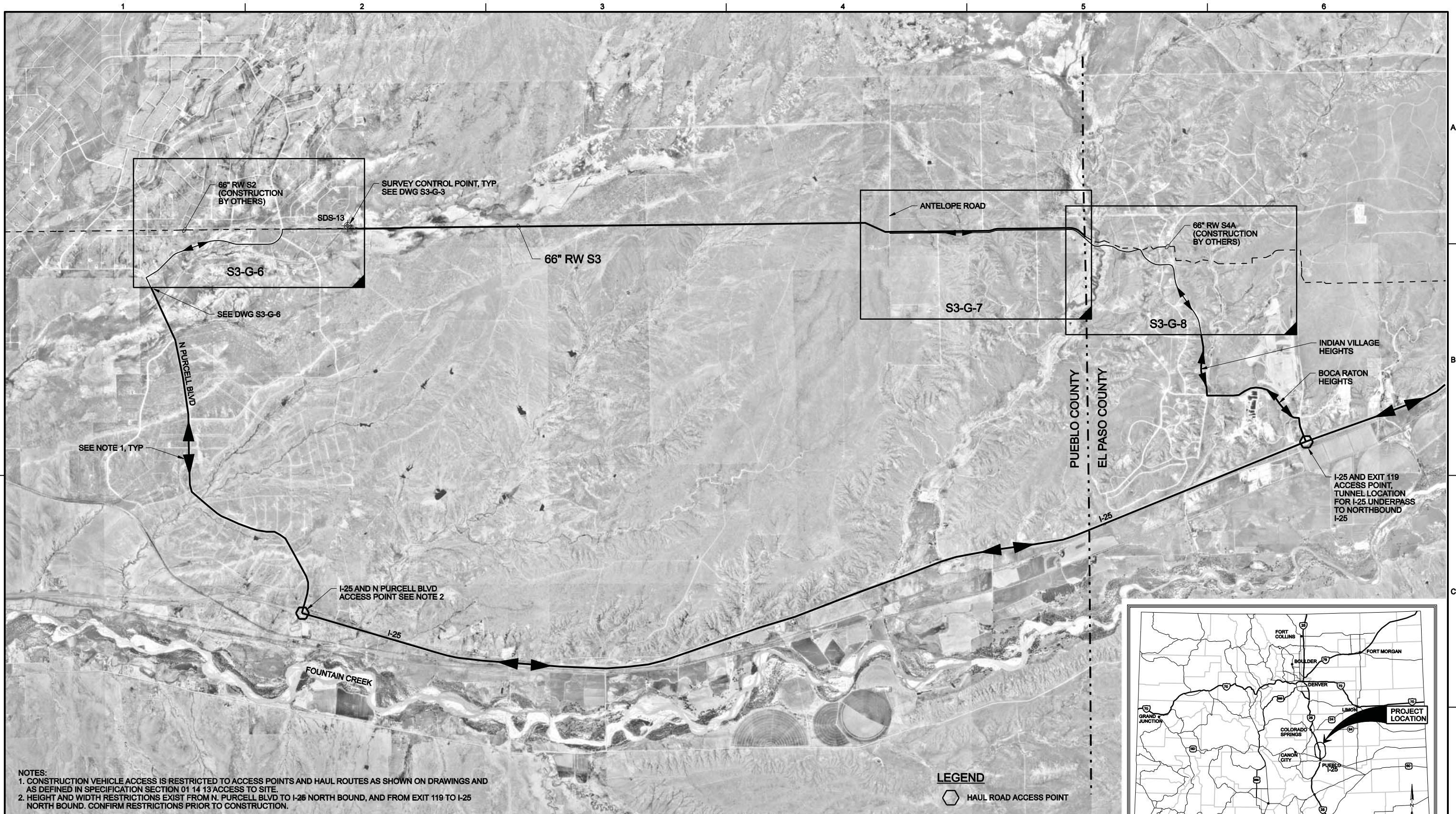
NATIONWIDE PERMIT NOTES

THE FOLLOWING NOTES ARE APPLICABLE TO AREAS THAT ARE SUBJECT TO A NWP 12 OR A NWP 33:

1. TYPE K BACKFILL MUST BE NATIVE TOPSOIL FROM THE TRENCH WITHIN AREAS SUBJECT TO THE US ARMY CORPS OF ENGINEERS NWP 12 REQUIREMENTS.
2. WHEN TEMPORARY FILLS ARE PLACED IN WETLANDS OR WATERS OF THE U.S., USE A HORIZONTAL MARKER (FABRIC, CERTIFIED WEED FREE STRAW) AS APPROVED BY CONSTRUCTION MANAGER TO DELINEATE THE EXISTING GROUND ELEVATION OF WETLANDS THAT WILL BE TEMPORARILY FILLED DURING CONSTRUCTION.
3. USE AND MAINTAIN APPROPRIATE SOIL EROSION AND SEDIMENT CONTROLS IN EFFECTIVE OPERATING CONDITION DURING CONSTRUCTION.
4. SEPARATE LOAD BEARING TEMPORARY STRUCTURES IN WATERS OF THE U.S. FROM EXISTING SURFACES BY GEOTEXTILE.
5. PLACE HEAVY EQUIPMENT WORKING IN WETLANDS ON MATS OR OTHER APPROVED MEASURES IN ORDER TO MINIMIZE SOIL DISTURBANCE.
6. PERMANENTLY STABILIZE OTHER FILLS, AS WELL AS ANY WORK BELOW THE ORDINARY HIGH WATER MARK FOR A WATER OF THE U.S. AT THE EARLIEST PRACTICABLE DATE. PERFORM WORK WITHIN WATERS OF THE U.S. DURING LOW-FLOW OR NO FLOW PERIODS.

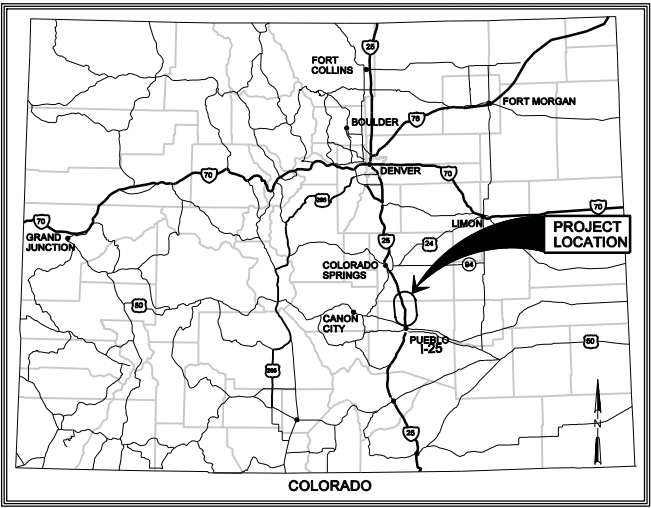
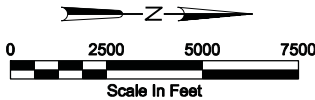


DSGN	E FORD					VERIFY SCALE	 Colorado Springs, CO 80903								SHEET	3
DR	B NORVILLE					BAR IS ONE INCH ON ORIGINAL DRAWING.									DWG	S3-G-3
CHK	B SPILLER					0 = 1"									DATE	NOVEMBER 2011
APVD	T MATSUURA	NO.	DATE	REVISION	BY	APVD									PROJ	425190.S3.03
							IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.									



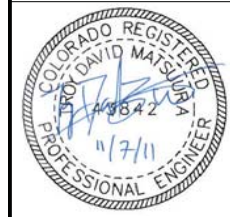
NOTES:
1. CONSTRUCTION VEHICLE ACCESS IS RESTRICTED TO ACCESS POINTS AND HAUL ROUTES AS SHOWN ON DRAWINGS AND AS DEFINED IN SPECIFICATION SECTION 01 14 13 ACCESS TO SITE.
2. HEIGHT AND WIDTH RESTRICTIONS EXIST FROM N. PURCELL BLVD TO I-25 NORTH BOUND, AND FROM EXIT 119 TO I-25 NORTH BOUND. CONFIRM RESTRICTIONS PRIOR TO CONSTRUCTION.

LEGEND
○ HAUL ROAD ACCESS POINT



VICINITY MAP
NTS

LOCATION MAP AND OVERALL HAUL ROUTE PLAN



PLAN WINDOW	S3-G-6	DRAWING NUMBER	INDICATES LOWER RIGHT CORNER OF PLAN
DSGN	T MATSUURA	NO.	DATE
DR	B NORVILLE	REVISION	BY
CHK	B SPILLER	APVD	T MATSUURA
APVD	T MATSUURA	NO.	DATE

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

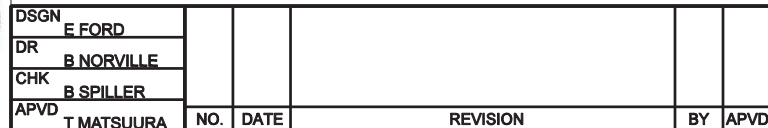
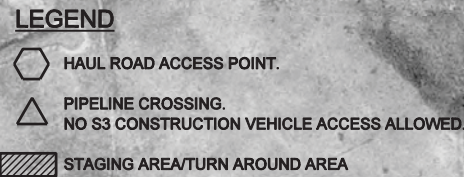
CH2MHILL
Colorado Springs, CO 80903


SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

GENERAL
LOCATION MAP, VICINITY MAP,
AND OVERALL HAUL ROUTE PLAN

SHEET	5
DWG	S3-G-5
DATE	NOVEMBER 2011
PROJ	425190.S3.03

1. CONSTRUCTION VEHICLE ACCESS IS RESTRICTED TO ACCESS POINTS AND HAUL ROUTES AS SHOWN ON DRAWINGS AND AS DEFINED IN SPECIFICATION SECTION 01 14 13 ACCESS TO SITE.
2. PARKING FACILITIES FOR PERSONNEL WORKING ON THE PROJECT IS RESTRICTED TO THE STAGING AREAS SHOWN ON THE DRAWINGS.
3. USE OF TURN AROUND AREA FOR STAGING IS NOT ALLOWED.
4. COORDINATE WITH S2 CONTRACTOR TO AVOID CONFLICTS AND DISRUPTION DURING CONSTRUCTION. MAINTAIN ACCESS AND RESTORE AREAS USED FOR ACCESS.



VERIFY SCALE
 BAR IS ONE INCH ON
 ORIGINAL DRAWING.
 0  1"
 IF NOT ONE INCH ON
 THIS SHEET, ADJUST
 SCALES ACCORDINGLY.

CH2MHILL
Colorado Springs, CO 80903

**SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3**

GENERAL

HAUL ROUTE PLAN
1 OF 3

SHEET	6
DWG	S3-G-6
DATE	NOVEMBER 2011
PROJ	425190.S3.03

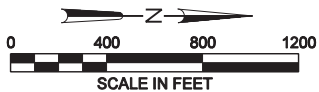


LEGEND

-  HAUL ROAD ACCESS POINT.
-  STAGING AREA/TURN AROUND AREA

NOTES:

1. CONSTRUCTION VEHICLE ACCESS IS RESTRICTED TO ACCESS POINTS AND HAUL ROUTES AS SHOWN ON DRAWINGS AND AS DEFINED IN SPECIFICATION SECTION 01 14 13 ACCESS TO SITE.



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DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

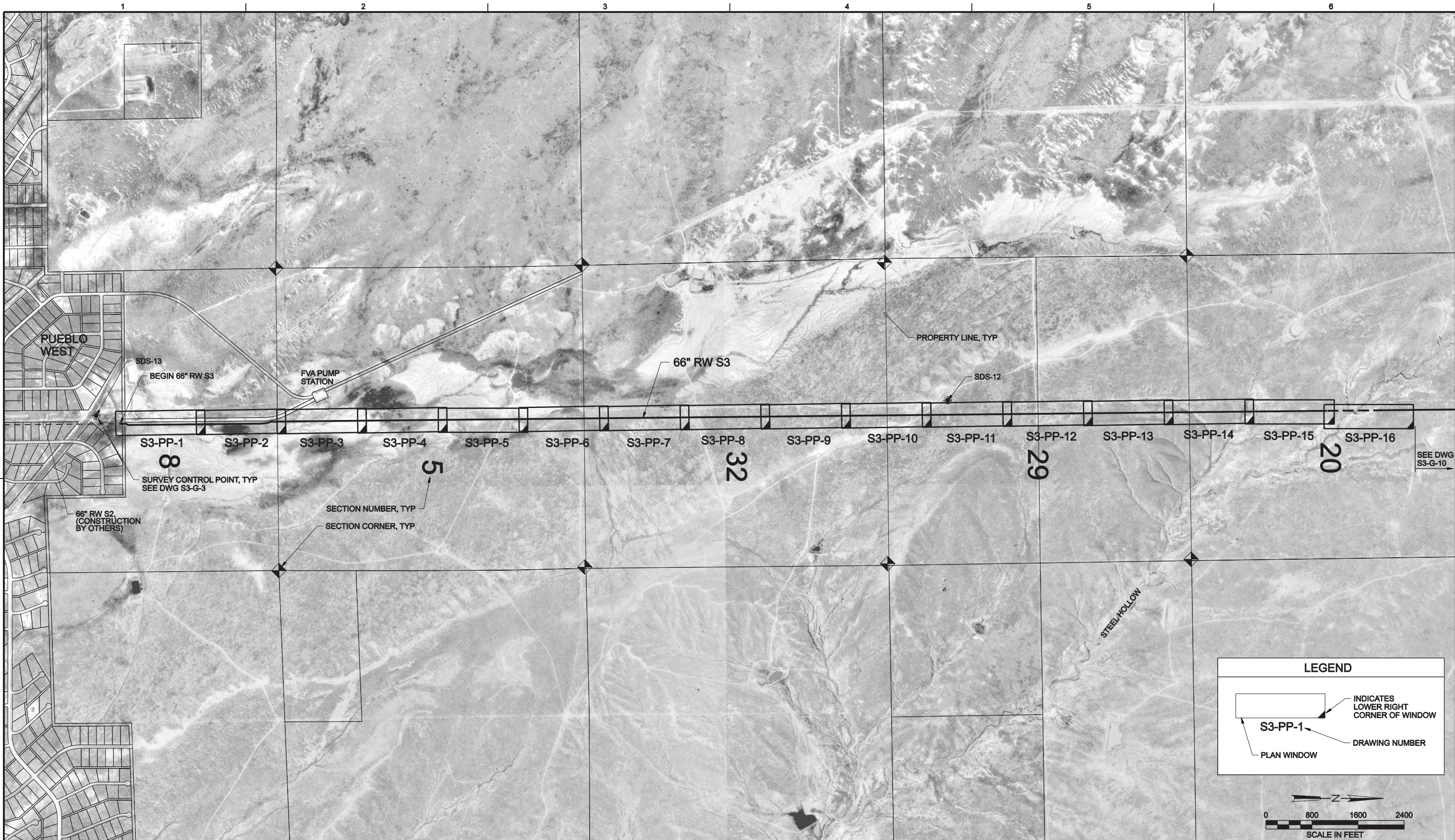
VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
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IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY.


CH2MHILL
Colorado Springs, CO 80903

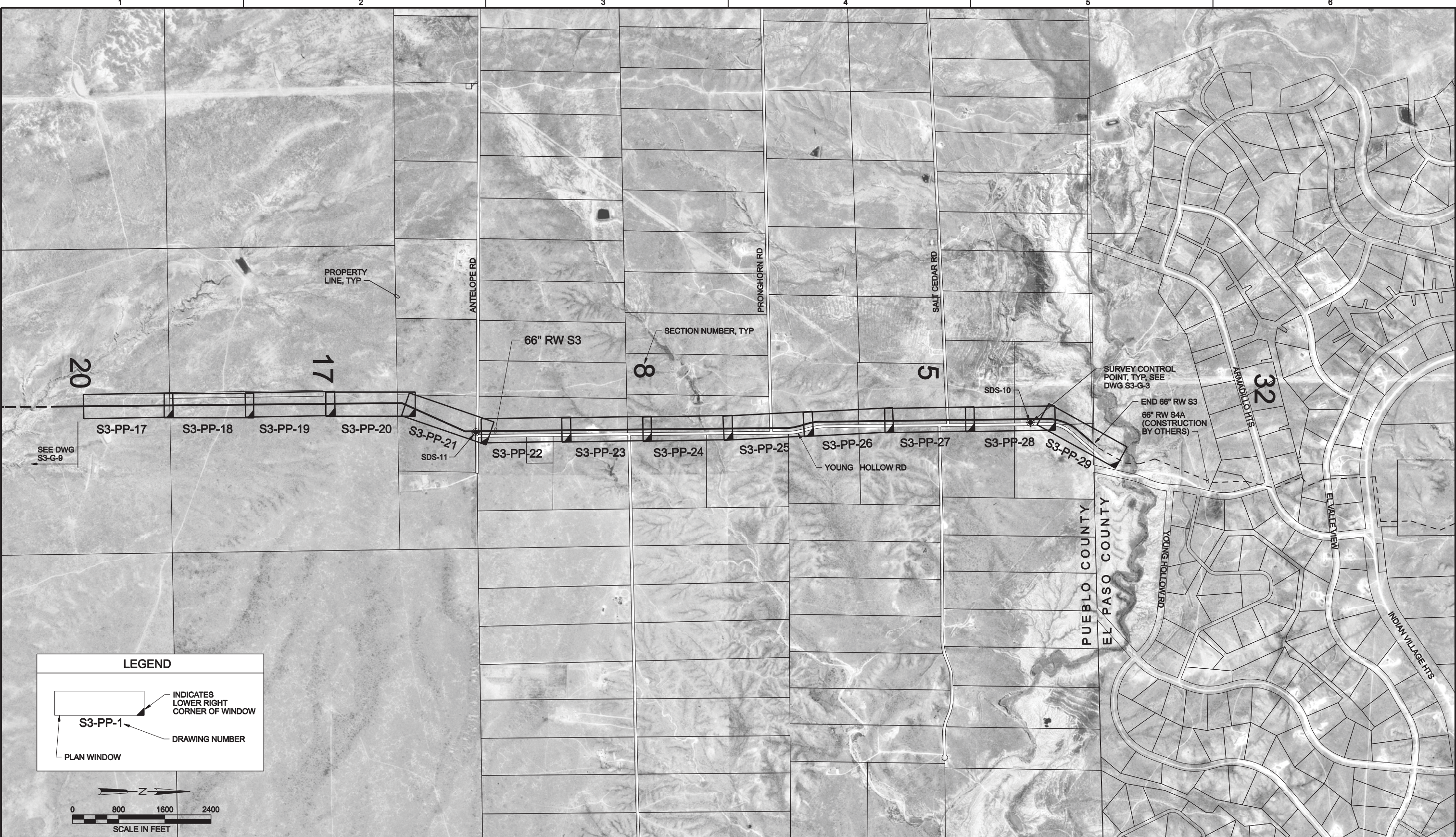
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

GENERAL
HAUL ROUTE PLAN
3 OF 3

SHEET	8
DWG	S3-G-8
DATE	NOVEMBER 2011
PROJ	425190.S3.03



																						
	DSGN								VERIFY SCALE								GENERAL		SHEET		9	
	E FORD								BAR IS ONE INCH ON ORIGINAL DRAWING.										DWG		S3-G-9	
	DR								0 1"										DATE		NOVEMBER 2011	
	CHK								IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.										PROJ		425190.S3.03	
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CH2MHILL Colorado Springs, CO 80903																						
SOUTHERN DELIVERY SYSTEM RAW WATER PIPELINE S3															KEY PLAN 1 OF 2							



DSGN	E FORD				
DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CH2MHILL
Colorado Springs, CO 80903

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

GENERAL
KEY PLAN
2 OF 2

SHEET	10
DWG	S3-G-10
DATE	NOVEMBER 2011
PROJ	425190.S3.03

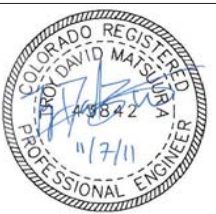
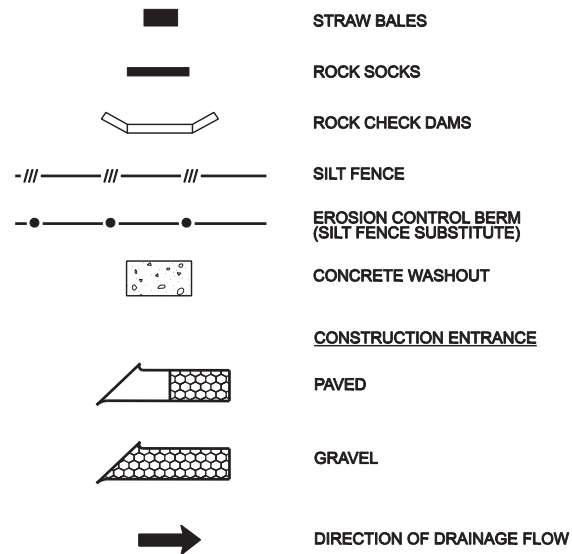
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SEDIMENT AND EROSION CONTROL GENERAL NOTES

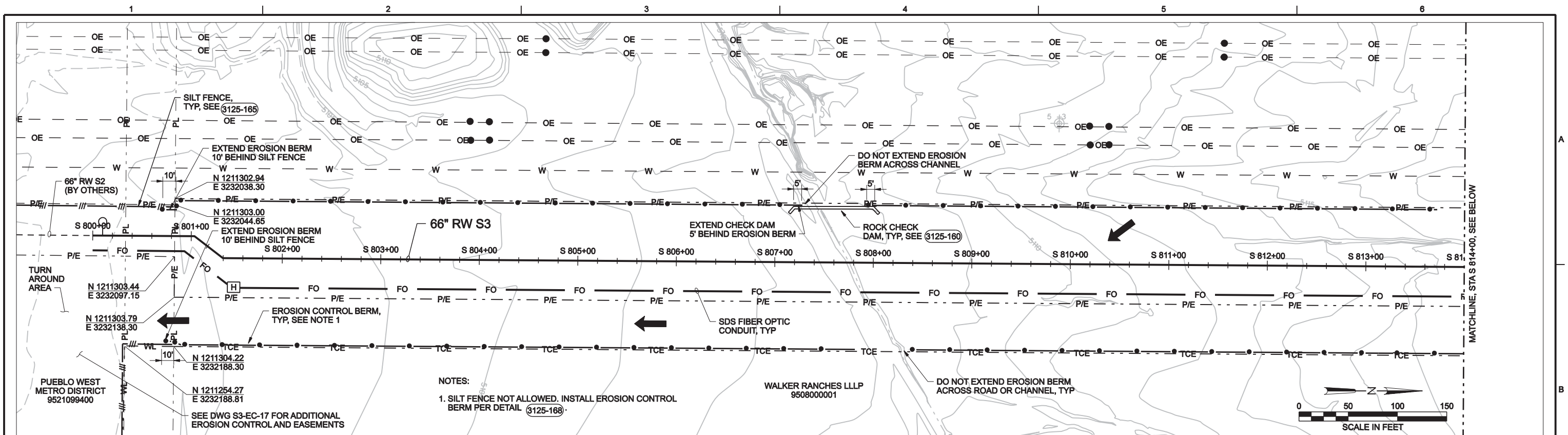
1. A STORMWATER MANAGEMENT PLAN (SWMP) HAS BEEN PREPARED BY UTILITIES FOR USE BY THE CONTRACTOR. THE SWMP HAS BEEN PREPARED IN ACCORDANCE WITH PUEBLO COUNTY, PUEBLO WEST METRO DISTRICT AND COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT CRITERIA. USE AS REQUIRED TO OBTAIN PERMITS IDENTIFIED IN THE SPECIFICATIONS. OBTAIN AND RETAIN A COPY OF THE SWMP ON SITE.
2. PLACE EROSION AND SEDIMENT CONTROL BMPS AND PROVIDE MAINTENANCE AND RECORD KEEPING IN ACCORDANCE WITH FEDERAL, STATE, AND COUNTY STANDARDS.
3. INSTALL WORK LIMIT FENCING DEFINING THE LIMITS OF CONSTRUCTION PRIOR TO OTHER CONSTRUCTION ACTIVITIES, INCLUDING CONSTRUCTION LIMITS ADJACENT TO STREAM CORRIDORS AND OTHER AREAS TO BE PRESERVED.
4. INSTALL EROSION AND SEDIMENT CONTROL BMPS, WHERE POSSIBLE, BEFORE THE START OF CONSTRUCTION.
5. INSTALL APPROVED BMPS AROUND STOCKPILED MATERIALS PER THE SPECIFICATIONS.
6. INSTALL APPROVED BMPS AROUND STAGING AREAS AND MAINTENANCE AREAS. PROTECT AND MAINTAIN AREAS PER FEDERAL, STATE, AND COUNTY STANDARDS.
7. STORE AND PROTECT HAZARDOUS MATERIAL PER REQUIREMENTS OF PROJECT PERMITS AND PER FEDERAL, STATE AND COUNTY OR OTHER APPLICABLE REQUIREMENTS
8. ADHERE TO THE APPROVED LIMITS OF CONSTRUCTION. OBTAIN APPROVAL FROM CONSTRUCTION MANAGER PRIOR TO MAKING CHANGES TO THE WORK LIMITS. ADDITIONAL EROSION/SEDIMENT CONTROLS MAY BE REQUIRED.
9. RETAIN AND PROTECT NATURAL VEGETATION WHEREVER POSSIBLE. LIMIT EXPOSURE OF BARE SOIL TO MINIMIZE EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION TO THE IMMEDIATE AREA REQUIRED FOR CONSTRUCTION OPERATIONS.
10. CONSTRUCTION VEHICLE TRAFFIC MUST ENTER/EXIT THE SITE THROUGH THE APPROVED ACCESS POINTS. VEHICLE TRACKING CONTROLS ARE REQUIRED AT ACCESS POINTS ON THE SITE. ADDITIONAL VEHICLE TRACKING CONTROLS TO BE ADDED AS REQUIRED BY PUEBLO COUNTY. INSTALL AND MAINTAIN VEHICLE TRACKING CONTROLS PER PUEBLO COUNTY.
11. KEEP PAVED AREAS CLEAN INCLUDING STREETS THROUGHOUT CONSTRUCTION. CLEAN WITH A STREET SWEEPER OR SIMILAR DEVICE. AT FIRST NOTICE OF DIRT TRACKED ON PAVED AREAS, STREET WASHING IS NOT ALLOWED. THE CONSTRUCTION MANAGER RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO ENSURE AREA STREETS ARE KEPT FREE OF SEDIMENT AND/OR CONSTRUCTION DEBRIS.
12. THE EROSION CONTROL PLANS MAY REQUIRE CHANGES OR ALTERATIONS TO MEET CHANGING SITE OR PROJECT CONDITIONS, TO ADDRESS MODIFICATIONS IN DESIGN OR INSTALLATION, OR TO MEET PERMIT REQUIREMENTS.
13. PROVIDE LINING OF TEMPORARY SWALES AND DITCHES. NO PERMANENT EARTH SLOPES GREATER THAN 3:1 ALLOWED, EXCEPT WHERE SHOWN ON DRAWINGS.
14. REMEDIATE SEDIMENT OR SOIL ACCUMULATIONS CREATED DUE TO CONSTRUCTION ACTIVITIES BEYOND THE LIMITS OF CONSTRUCTION IMMEDIATELY.
15. PROVIDE A WATER SOURCE ON SITE DURING CONSTRUCTION ACTIVITIES AND UTILIZE AS REQUIRED TO MINIMIZE DUST FROM EQUIPMENT AND WIND IN ACCORDANCE WITH THE SPECIFICATIONS.
16. SEED AND MULCH SOILS THAT WILL BE STOCKPILED FOR MORE THAN FOURTEEN (14) DAYS. DO NOT PLACE STOCKPILES WITHIN ONE HUNDRED (100) FEET OF THE TOP OF BANK OF ANY WATERWAY OR DRAINAGE.
17. CHEMICAL OR HAZARDOUS MATERIAL SPILLS THAT MAY ENTER WATERS OF THE STATE OF COLORADO, THAT INCLUDE BUT ARE NOT LIMITED TO, SURFACE WATER, GROUNDWATER AND DRY GULLIES OR STORM SEWERS, LEADING TO THE RELEASES OF PETROLEUM PRODUCTS AND CERTAIN HAZARDOUS SUBSTANCES LISTED UNDER THE FEDERAL CLEAN WATER ACT (40 CFR PART 118) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER AS WELL AS THE CDPHE. REPORT SPILLS THAT POSE AN IMMEDIATE RISK TO HUMAN LIFE TO 911.
18. THE USE OF REBAR, STEEL STAKES, OR STEEL FENCE POSTS FOR STAKING OR SUPPORT OF BMPS IS PROHIBITED.
19. INSTALL CONCRETE WASHOUT LOCATIONS AS NEEDED WITHIN THE WORK LIMITS. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE IS PROHIBITED WITHIN 500 FEET OF ANY WATERWAY. PROPERLY CLEAN UP AND DISPOSE OF CONCRETE WASTE AT AN APPROPRIATE LOCATION.

20. STABILIZE DISTURBED AREAS INCLUDING ROADS, WITHIN 14 DAYS OF SUBSTANTIAL COMPLETION OF GRADING, INCLUDING AREAS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS, WHICHEVER IS LESS. THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
21. TRASH RECEPTACLES AND PORTABLE TOILETS ARE PROHIBITED WITHIN 500 FEET OF ANY WATERWAY OR DRAINAGE.
22. CONDUCT VEHICLE MAINTENANCE, CLEANING, AND FUELING OFF-SITE, IF POSSIBLE. IF CONDUCTED ONSITE, THESE OPERATIONS MUST BE APPROVED BY CONSTRUCTION MANAGER, AND CONDUCTED ON A LEVEL GROUND SURFACE IN A DESIGNATED AREA WITH APPROVED PERIMETER CONTROLS.
23. STORE HAZARDOUS MATERIALS AND CHEMICALS ONSITE ONLY IN THE STAGING AREA AND ONLY IN AN APPROVED, COVERED TEMPORARY STRUCTURE. OBTAIN ANY REQUIRED PERMITS OR APPROVALS.
24. INSPECT BMPS A MINIMUM OF EVERY 14 DAYS AND IMMEDIATELY AFTER STORM EVENTS. CORRECT ANY DAMAGE OR DEFICIENCIES DISCOVERED DURING THE INSPECTION IN ACCORDANCE WITH PERMIT REQUIREMENTS, SPECIFICATIONS, AND PUEBLO COUNTY.
25. REMOVE SEDIMENTS WHEN SEDIMENTS HAVE ACCUMULATED TO 1/2 THE HEIGHT OF THE BMP.
26. REMOVE AND REPLACE EROSION LOGS AFTER EVERY STORM.

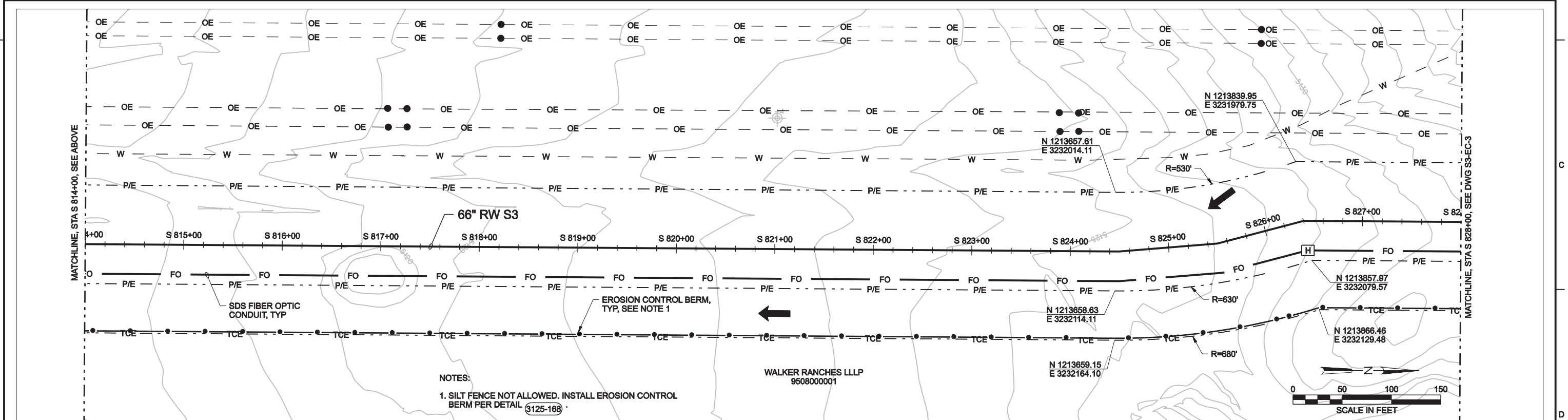
EROSION CONTROL LEGEND



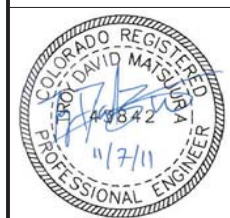
DSGN	T MATSUURA					VERIFY SCALE	 Colorado Springs, CO 80903						EROSION CONTROL AND EASEMENT PLANS EROSION CONTROL NOTES	SHEET	63
DR	B NORVILLE					BAR IS ONE INCH ON ORIGINAL DRAWING. 0  1"								DWG	S3-EC-1
CHK	B SPILLER					IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.								DATE	NOVEMBER 2011
APVD	J HENRY	NO.	DATE	REVISION	BY	APVD								PROJ	425190.S3.03



EROSION CONTROL PLAN, SEE S3-PP-1



EROSION CONTROL PLAN, SEE S3-PP-2



DSGN	A VAUGHAN				
DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

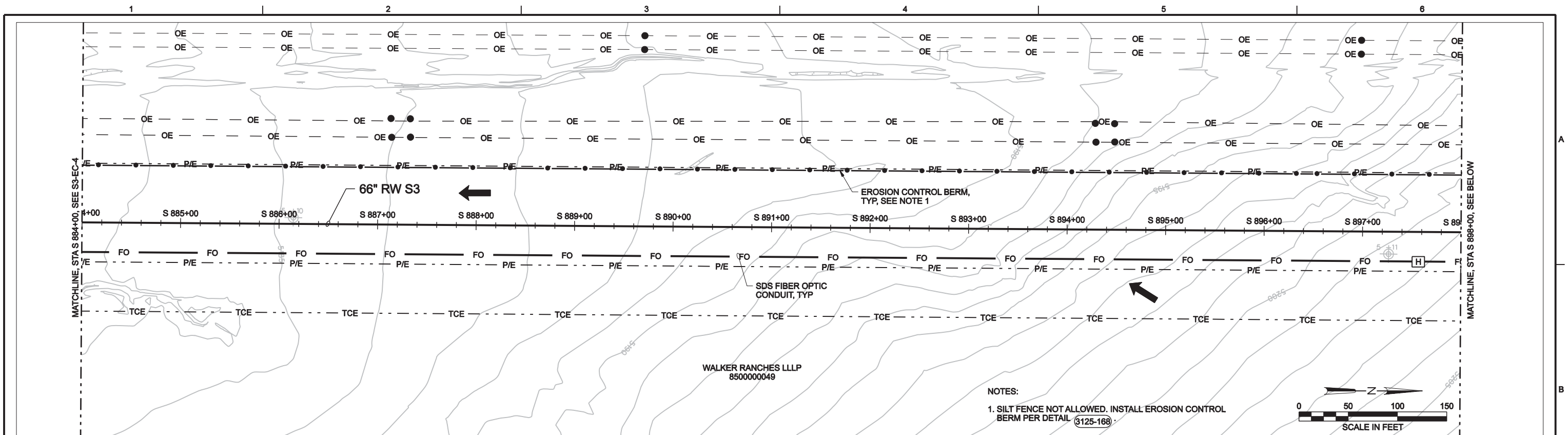
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SCALES ACCORDINGLY.

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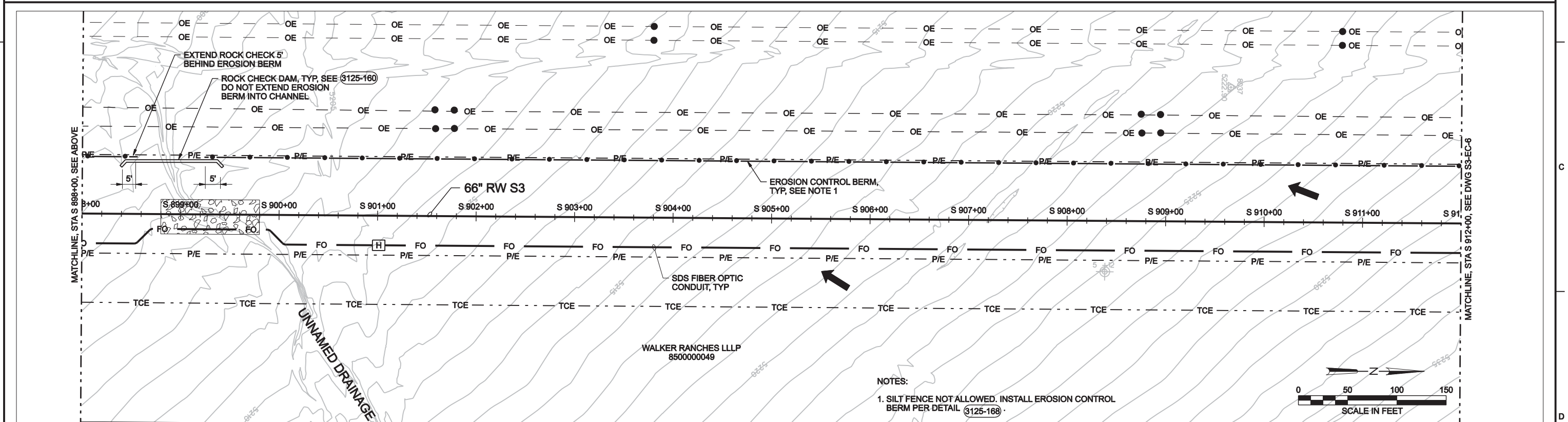
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

EROSION CONTROL AND EASEMENT PLANS
STATION S 800+00 TO STATION S 828+00

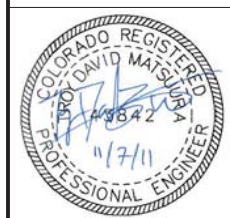
SHEET	64
DWG	S3-EC-2
DATE	NOVEMBER 2011
PROJ	425190.S3.03



EROSION CONTROL PLAN, SEE S3-PP-7



EROSION CONTROL PLAN, SEE S3-PP-8



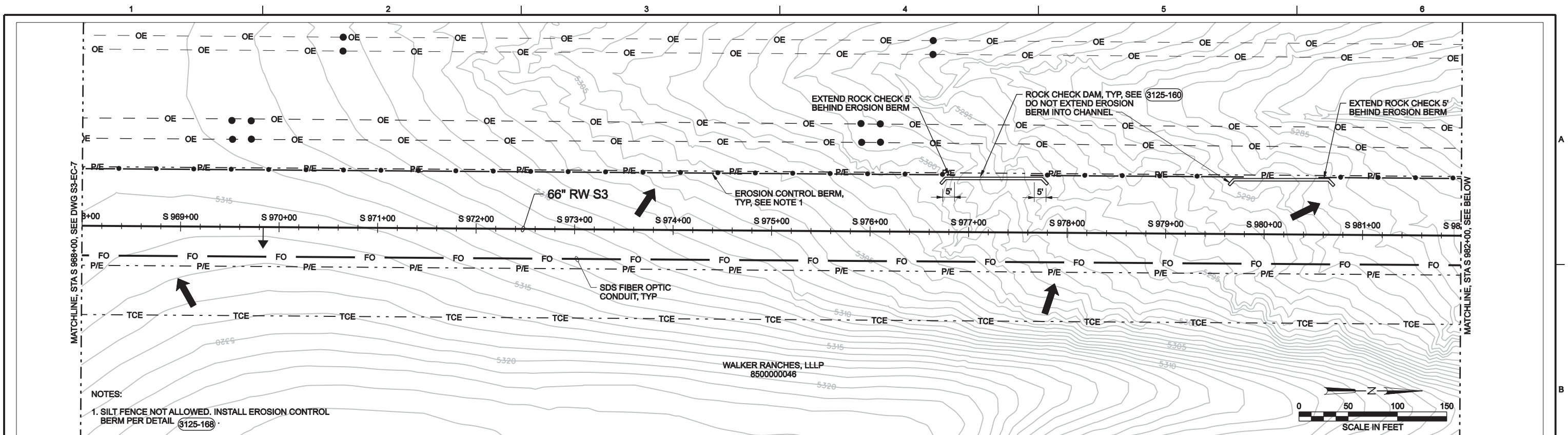
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DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

VERIFY SCALE
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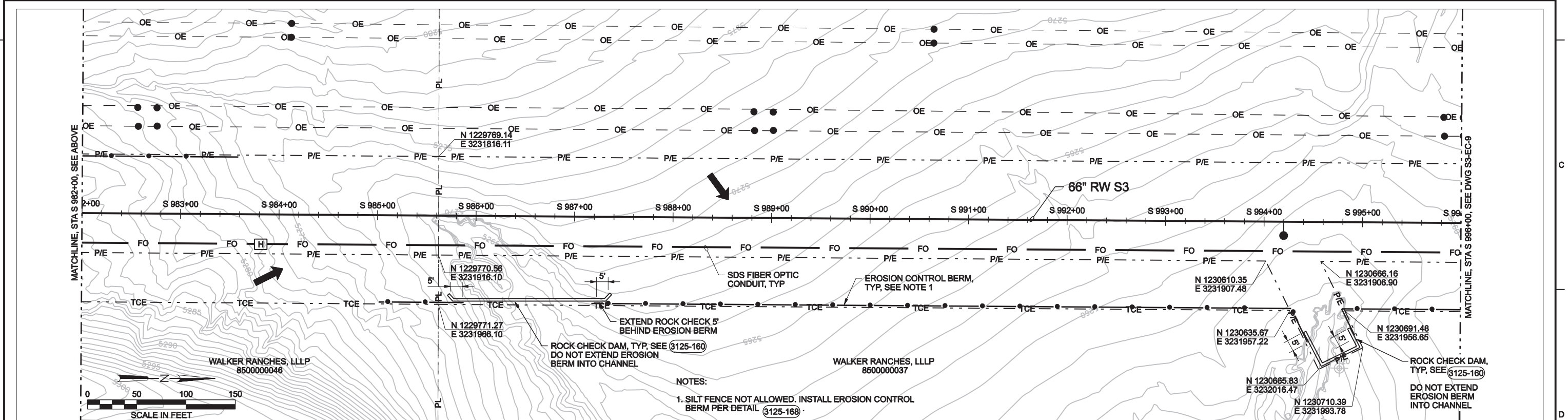
CH2MHILL
Colorado Springs, CO 80903

SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

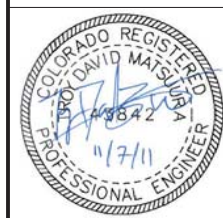
EROSION CONTROL AND EASEMENT PLANS		SHEET	67
STATION S 884+00 TO STATION S 912+00		DWG	S3-EC-5
		DATE	NOVEMBER 2011
		PROJ	425190.S3.03



EROSION CONTROL PLAN, SEE S3-PP-13



EROSION CONTROL PLAN, SEE S3-PP-14



DSGN	A VAUGHAN				
DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

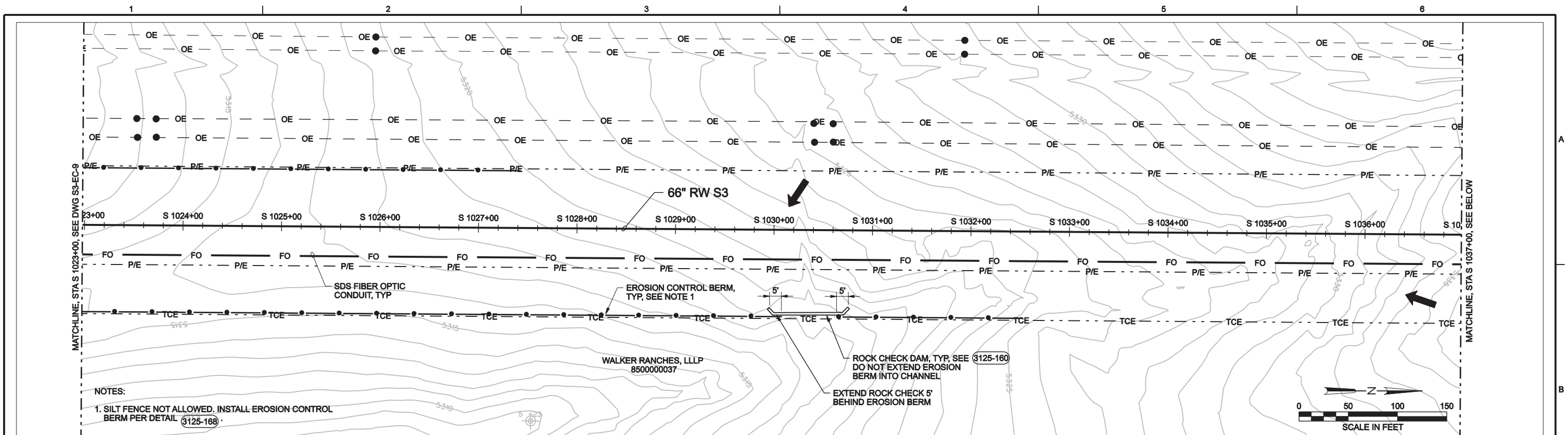
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Colorado Springs, CO 80903

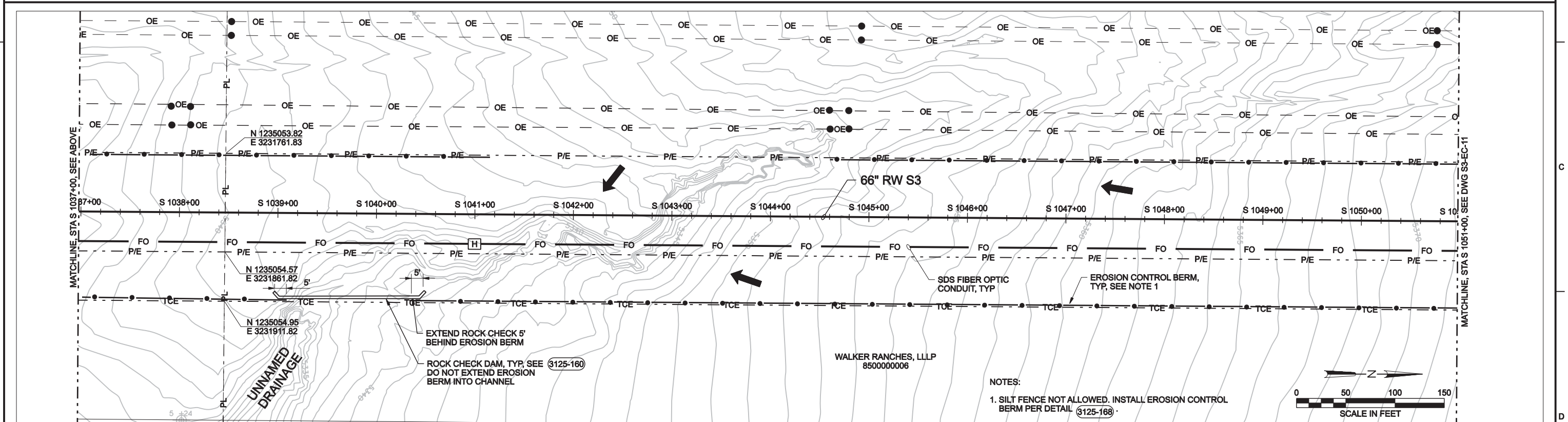
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

EROSION CONTROL AND EASEMENT PLANS
STATION S 968+00 TO STATION S 996+00

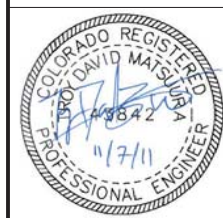
SHEET	70
DWG	S3-EC-8
DATE	NOVEMBER 2011
PROJ	425190.S3.03



EROSION CONTROL PLAN, SEE S3-PP-17



EROSION CONTROL PLAN, SEE S3-PP-18



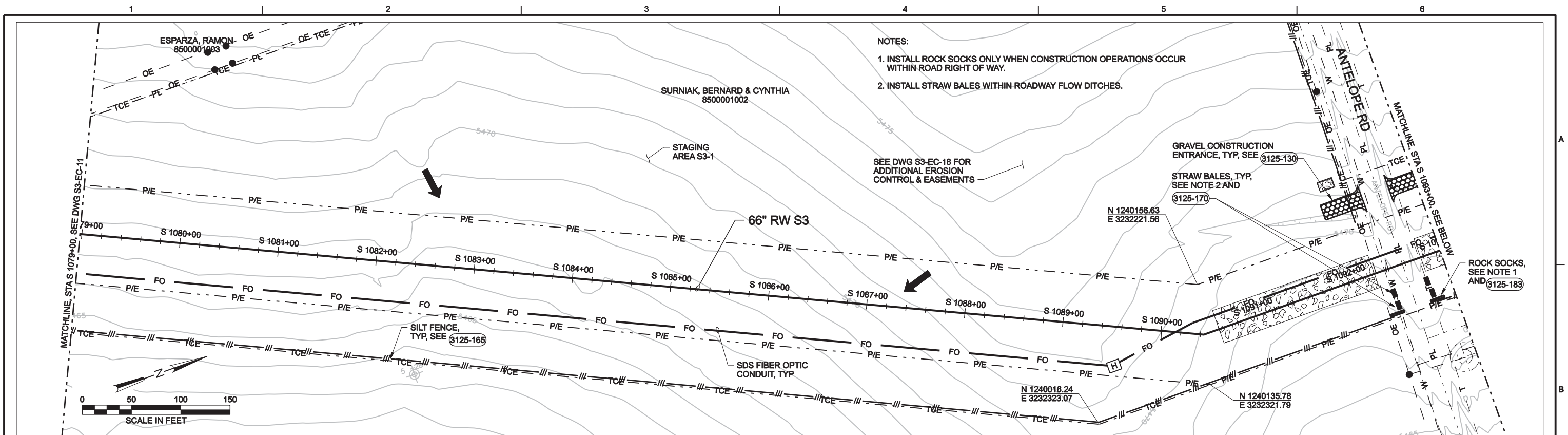
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DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

VERIFY SCALE
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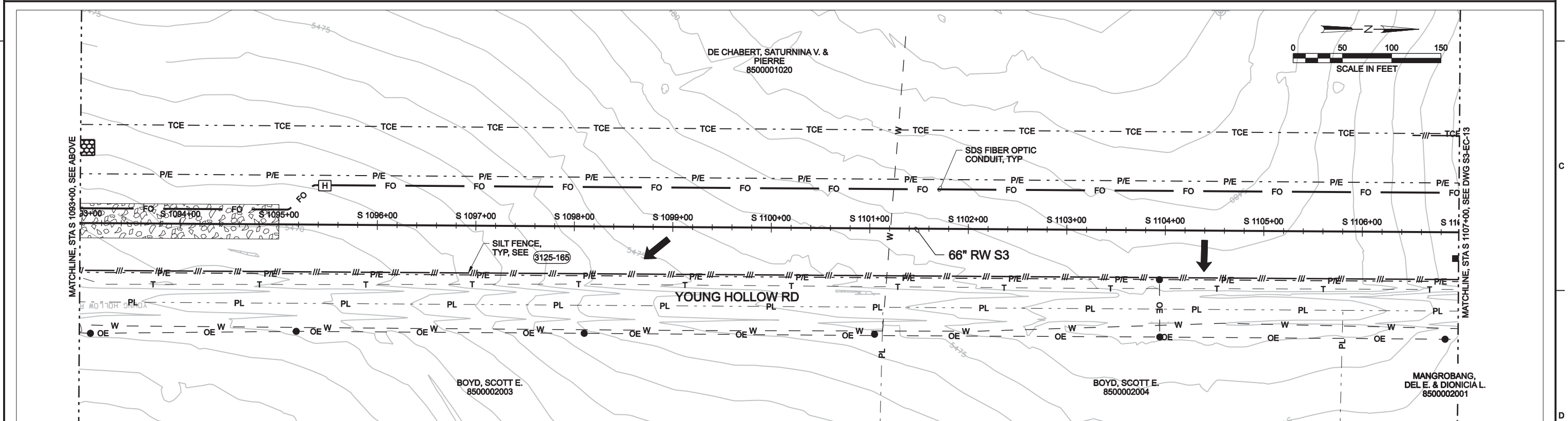
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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

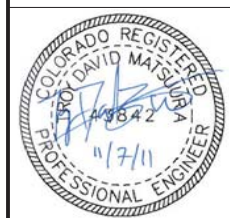
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STATION S 1023+00 TO STATION S 1051+00		DWG	S3-EC-10
		DATE	NOVEMBER 2011
		PROJ	425190.S3.03



EROSION CONTROL PLAN, SEE S3-PP-21



EROSION CONTROL PLAN, SEE S3-PP-22



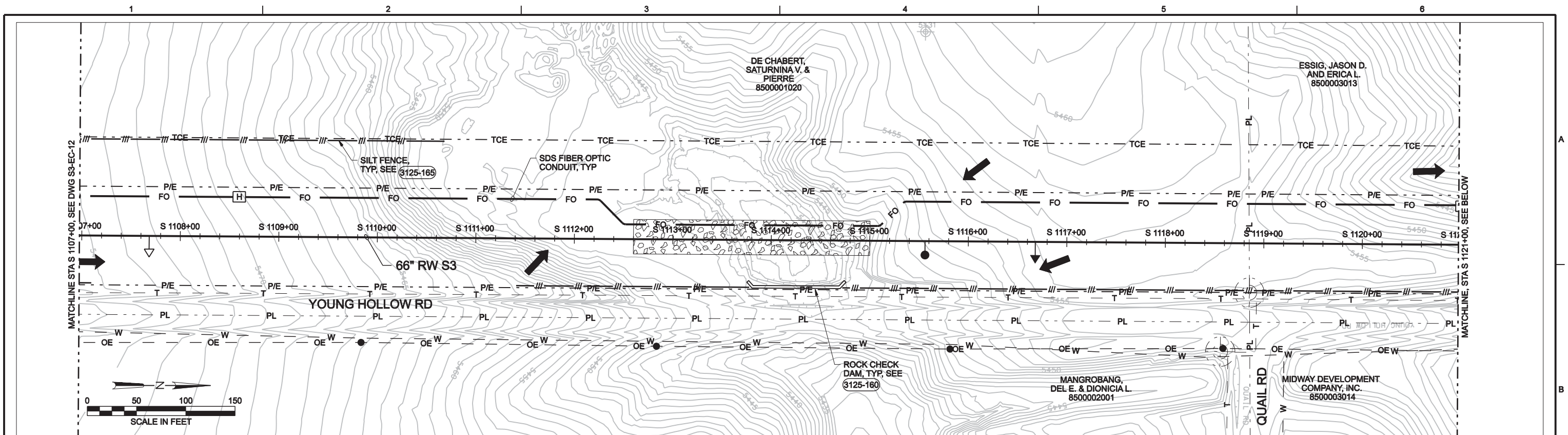
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DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUJURA	NO.	DATE	REVISION	BY

VERIFY SCALE
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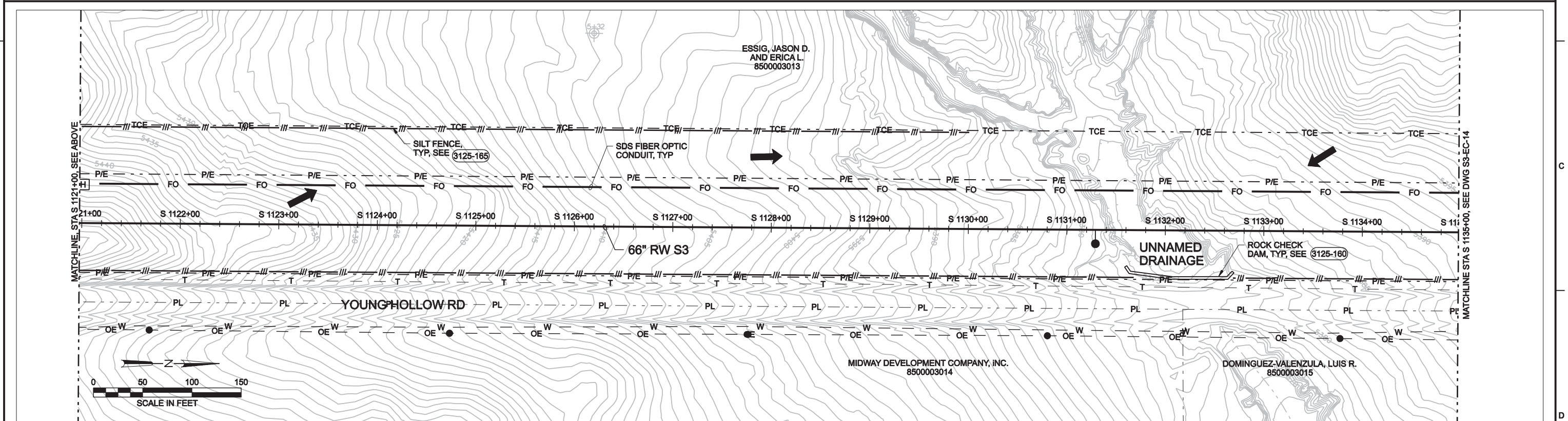
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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

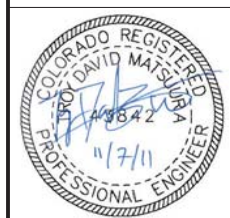
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STATION S 1079+00 TO STATION S 1107+00	DWG	S3-EC-12
	DATE	NOVEMBER 2011
	PROJ	425190.S3.03



EROSION CONTROL PLAN, SEE S3-PP-23



EROSION CONTROL PLAN, SEE S3-PP-24



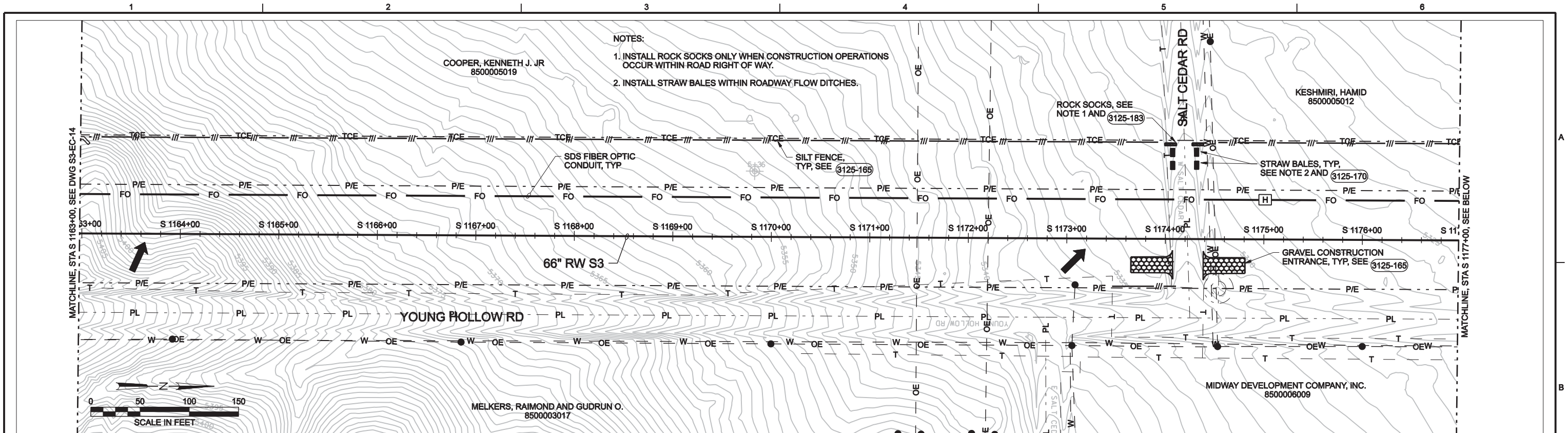
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DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

VERIFY SCALE
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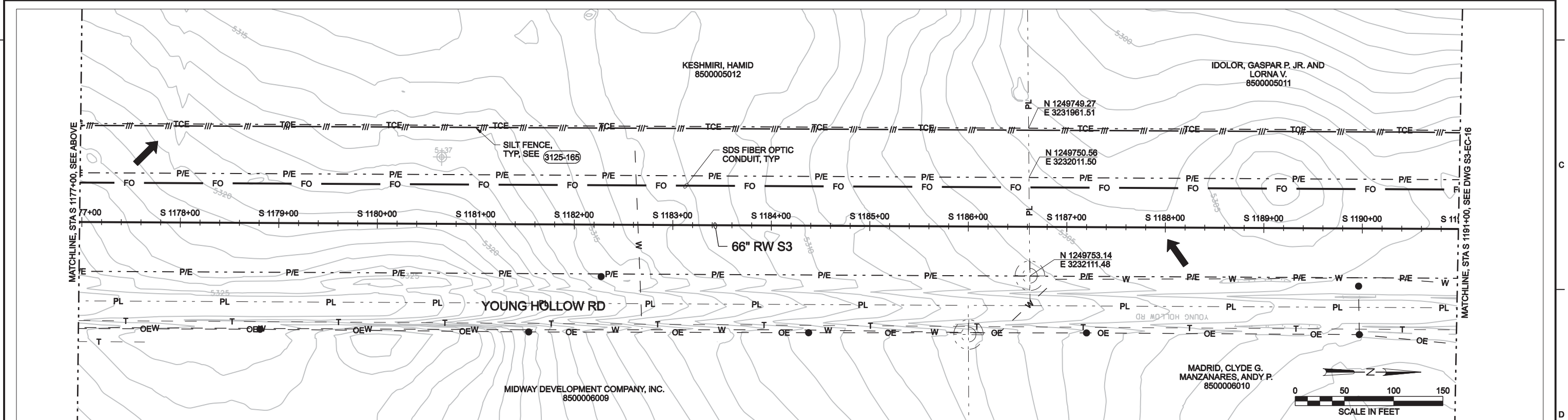
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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

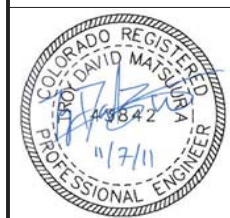
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STATION S 1107+00 TO STATION S 1135+00		DWG	S3-EC-13
		DATE	NOVEMBER 2011
		PROJ	425190.S3.03



EROSION CONTROL PLAN, SEE S3-PP-27



EROSION CONTROL PLAN, SEE S3-PP-28



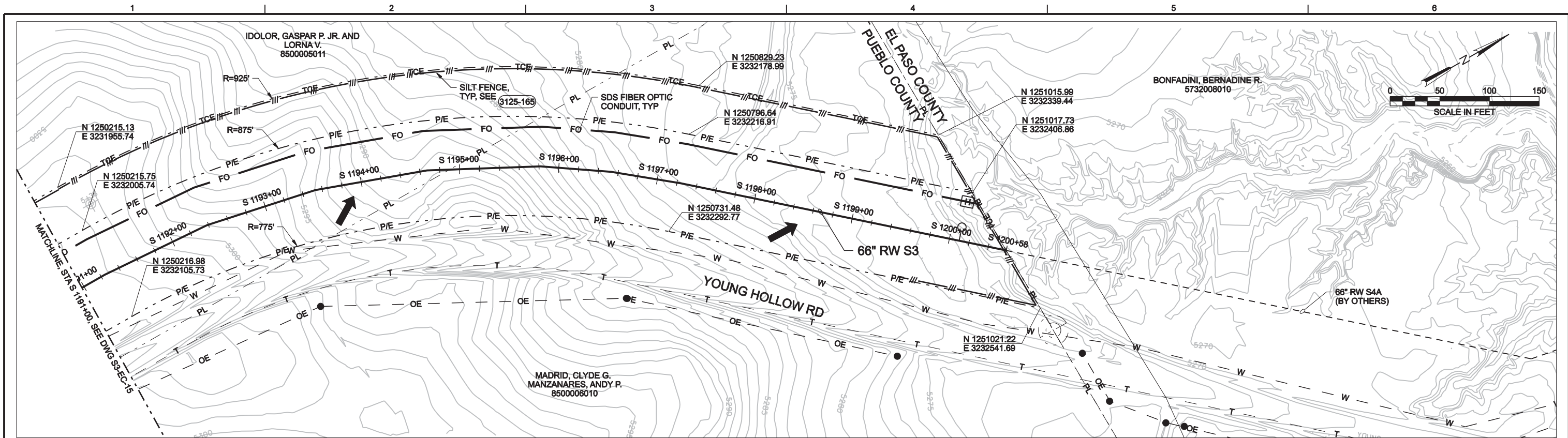
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DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

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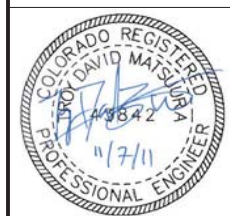
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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

EROSION CONTROL AND EASEMENT PLANS		SHEET	77
STATION S 1163+00 TO STATION S 1191+00		DWG	S3-EC-15
		DATE	NOVEMBER 2011
		PROJ	425190.S3.03



EROSION CONTROL PLAN, SEE S3-PP-29



DSGN	A VAUGHAN				
DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

VERIFY SCALE
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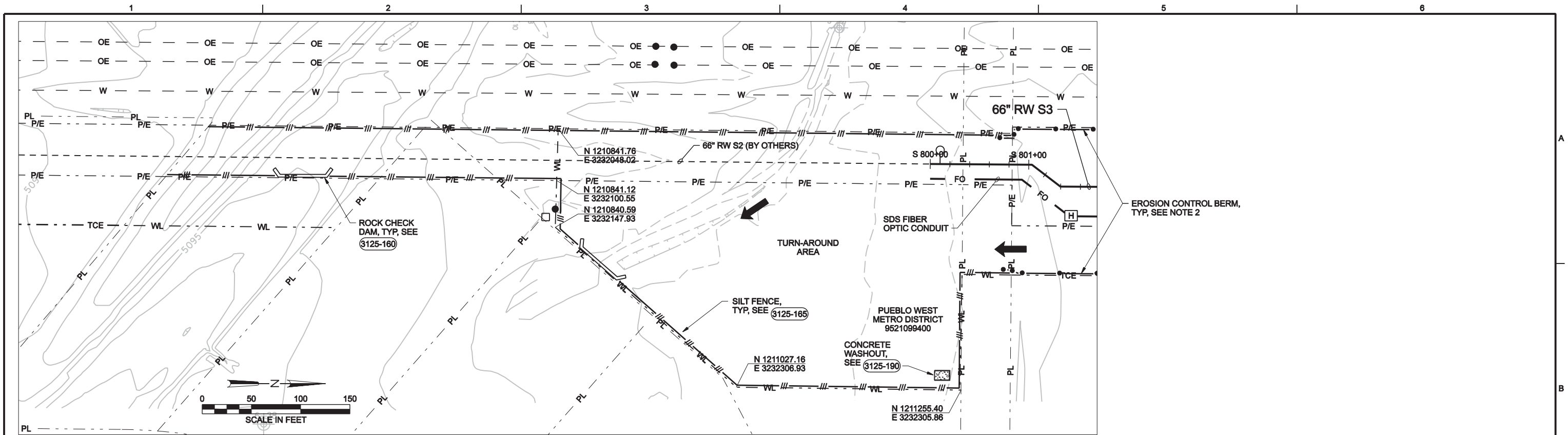
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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

EROSION CONTROL AND EASEMENT PLANS

STATION S 1191+00 TO
POE STATION S 1200+58.38

SHEET	78
DWG	S3-EC-16
DATE	NOVEMBER 2011
PROJ	425190.S3.03



TURN-AROUND AREA

- NOTES:
- COORDINATE INSTALLATION OF EROSION CONTROL MEASURES WITH CONSTRUCTION MANAGER. INSTALLATION AND MAINTENANCE OF EROSION CONTROL BMP'S SHALL NOT INTERFERE WITH WORK PERFORMED BY S2 CONTRACTOR.
 - SILT FENCE NOT ALLOWED THIS SIDE OF PROPERTY LINE. CONTRACTOR TO SUBMIT SUBSTITUTE BMP FOR ENGINEER APPROVAL.



DSGN	E FORD						
DR	B NORVILLE						
CHK	B SPILLER						
APVD	T MATSUURA	NO.	DATE	REVISION	BY	APVD	

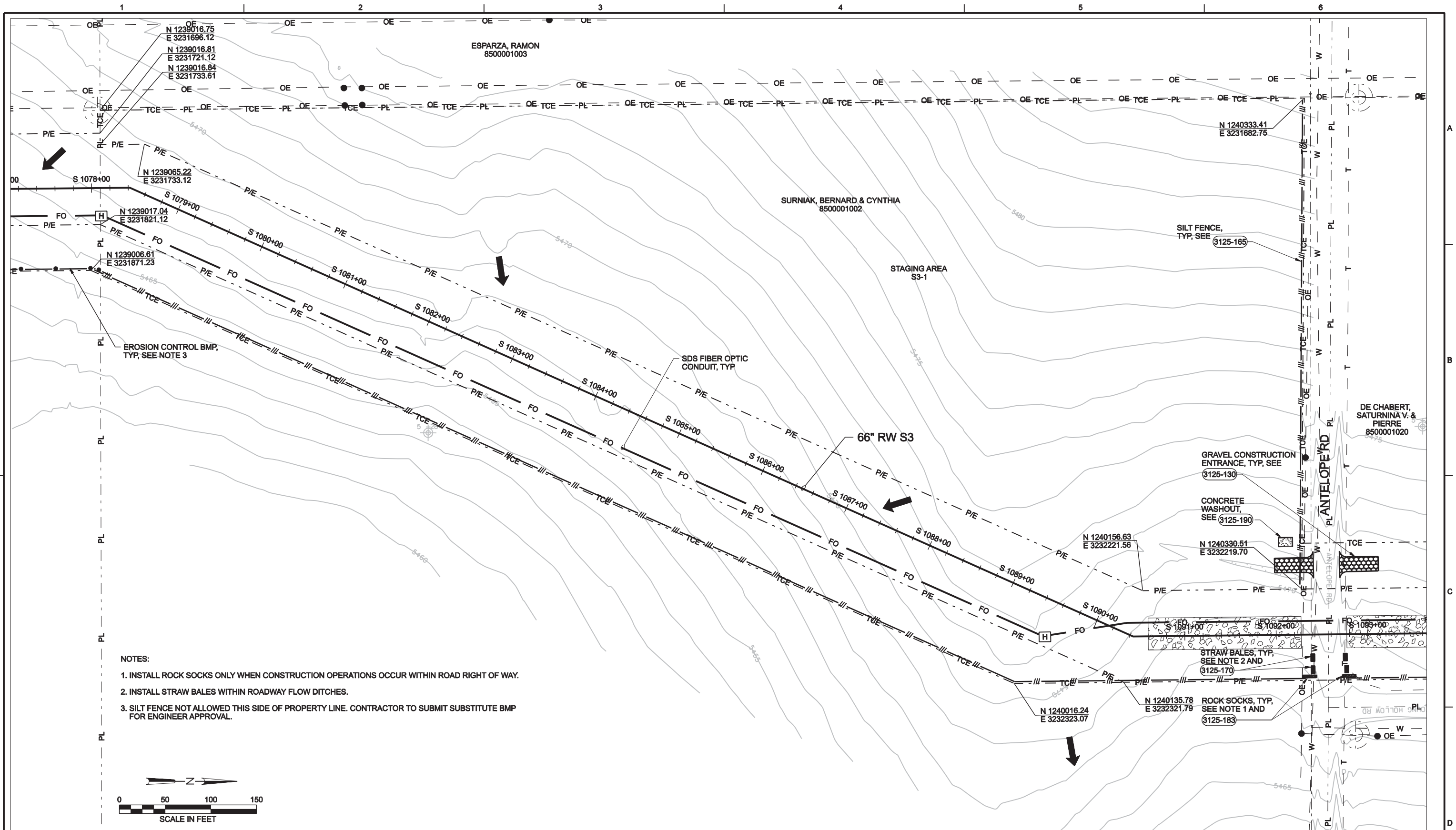
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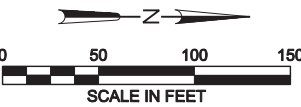
SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

EROSION CONTROL AND EASEMENT PLANS
TURN AROUND AREA

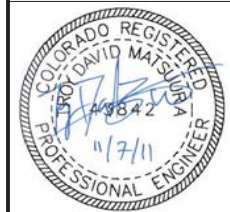
SHEET	79
DWG	S3-EC-17
DATE	NOVEMBER 2011
PROJ	425190.S3.03



- NOTES:
1. INSTALL ROCK SOCKS ONLY WHEN CONSTRUCTION OPERATIONS OCCUR WITHIN ROAD RIGHT OF WAY.
 2. INSTALL STRAW BALES WITHIN ROADWAY FLOW DITCHES.
 3. SILT FENCE NOT ALLOWED THIS SIDE OF PROPERTY LINE. CONTRACTOR TO SUBMIT SUBSTITUTE BMP FOR ENGINEER APPROVAL.



STAGING AREA S3-1



DSGN	E FORD				
DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

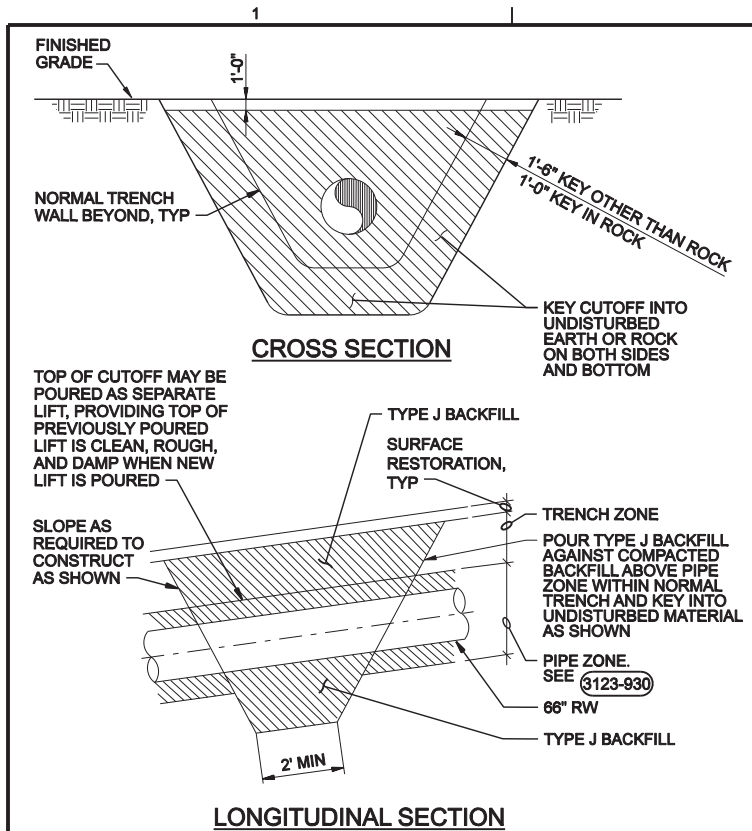
VERIFY SCALE
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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

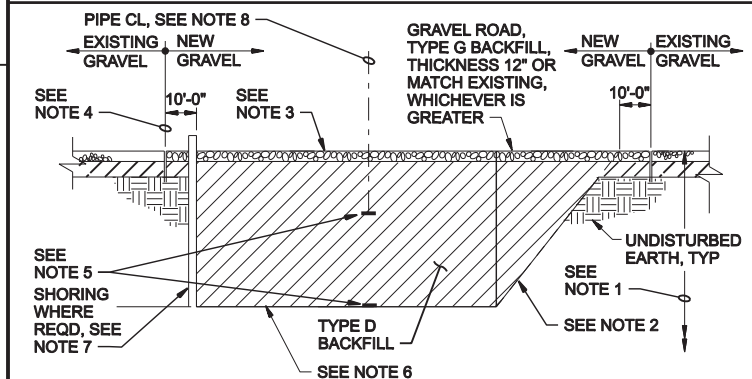
EROSION CONTROL AND EASEMENT PLANS
STAGING AREA S3-1

SHEET	80
DWG	S3-EC-18
DATE	NOVEMBER 2011
PROJ	425190.S3.03



TRENCH PLUG
NTS

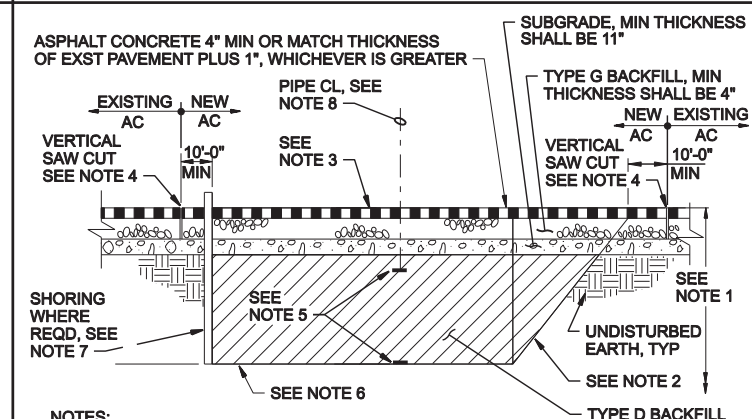
3123-900



- NOTES:**
1. TRENCH ZONE.
 2. SLOPE TRENCH WALLS OR SHORE EXCAVATIONS FOR CONSTRUCTION SAFETY AND IN ACCORDANCE WITH OSHA REQUIREMENTS. FOR ROADWAY CROSSINGS, CONSTRUCTION PERMIT FROM ROADWAY PERMITTING AUTHORITY WILL GOVERN THE USE OF SLOPED TRENCH SIDEWALLS.
 3. REPLACE GRAVEL ROADWAY SECTION, MINIMUM THICKNESS 12".
 4. EXTEND NEW GRAVEL 10 FEET OUTSIDE LIMITS OF TRENCH EXCAVATION EACH SIDE.
 5. INSTALL MARKING TAPE 2 FEET BELOW GRADE AND ONE FOOT ABOVE TOP OF PIPE AT CENTERLINE, AS INDICATED.
 6. SEE (3123-930).
 7. REMOVE SHORING UNLESS OTHERWISE APPROVED BY THE CONSTRUCTION MANAGER.
 8. LIMITS OF TRENCH WIDTH (3123-930).

TRENCH ZONE - GRAVEL SURFACE RESTORATION

3123-930C



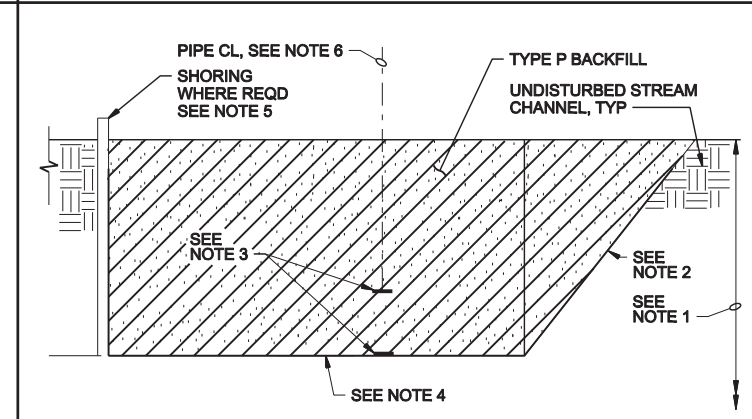
- NOTES:**
1. TRENCH ZONE.
 2. SLOPE TRENCH WALLS OR SHORE EXCAVATIONS FOR CONSTRUCTION SAFETY IN ACCORDANCE WITH OSHA REQUIREMENTS. FOR ROADWAY CROSSINGS, CONSTRUCTION PERMIT FROM ROADWAY PERMITTING TRENCH SIDEWALLS.
 3. REPLACE PAVED ROADWAY SECTION AS INDICATED.
 4. CONDUCT SAW CUTS OF EXISTING PAVEMENT STRAIGHT, SQUARE AND PARALLEL TO THE TRENCH, A MINIMUM OF 10' OUTSIDE LIMITS OF TRENCH EXCAVATION. PAINT EDGE OF EXISTING ASPHALT WITH TACK COAT PRIOR TO PAVING. CRACK SEAL AFTER PAVING OPERATION.
 5. INSTALL MARKING TAPE 4 FEET BELOW GRADE AND ONE FOOT ABOVE TOP OF PIPE AT CENTERLINE, AS INDICATED.
 6. SEE (3123-930).
 7. REMOVE SHORING UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER.
 8. LIMITS OF TRENCH WIDTH (3123-930) . PERMITTING AUTHORITY WILL GOVERN THE USE OF SLOPES AS INDICATED.

TRENCH ZONE - PAVED SURFACE RESTORATION

3123-930D

TRENCH ZONE - OPEN COUNTRY SURFACE RESTORATION
NTS

3123-930A



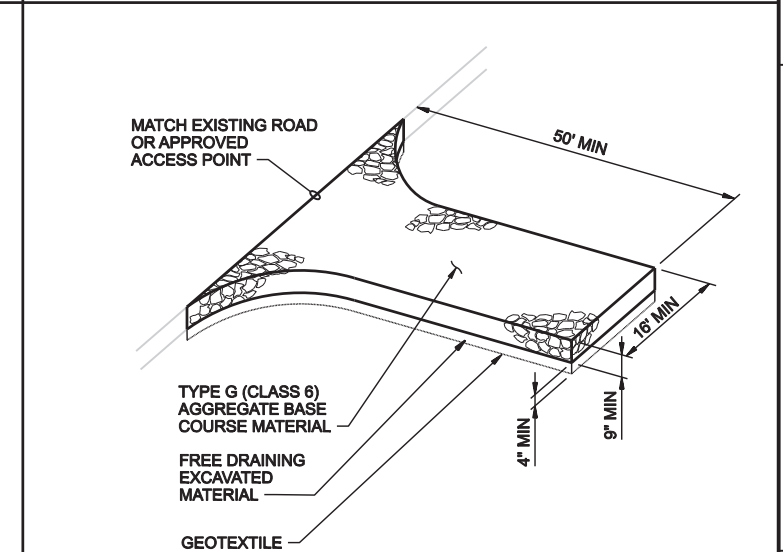
- NOTES:**
1. TRENCH ZONE.
 2. SLOPE TRENCH WALLS OR SHORE EXCAVATIONS FOR CONSTRUCTION SAFETY IN ACCORDANCE WITH OSHA REQUIREMENTS.
 3. INSTALL MARKING TAPE 3 FEET BELOW GRADE AND ONE FOOT ABOVE TOP OF PIPE AT CENTERLINE, AS INDICATED.
 4. SEE (3123-930).
 5. REMOVE SHORING UNLESS OTHERWISE APPROVED BY THE CONSTRUCTION MANAGER.
 6. LIMITS OF TRENCH WIDTH (3123-930).
 7. IN SOME CASES CLSM MAY EXTEND INTO TRENCH ZONE.

TRENCH ZONE - NON-VEGETATED STREAM CHANNEL RESTORATION
NTS

3123-930E

TRENCH ZONE - VEGETATED STREAM CHANNEL RESTORATION
NTS

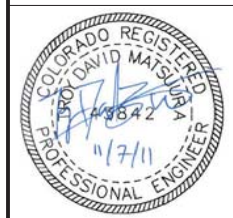
3123-930B



- NOTES:**
1. ADDITIONAL GRAVEL MAY HAVE TO BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
 2. REMOVE GRAVEL ENTRANCE AND REPLACE WITH NEW BASE COURSE PRIOR TO COMPLETION OF ACCESS ROAD.

GRAVEL CONSTRUCTION ENTRANCE
NTS

3125-130



DSGN	E FORD				
DR	B NORVILLE				
CHK	B SPILLER				
APVD	T MATSUURA	NO.	DATE	REVISION	BY

VERIFY SCALE
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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

STANDARD DETAILS

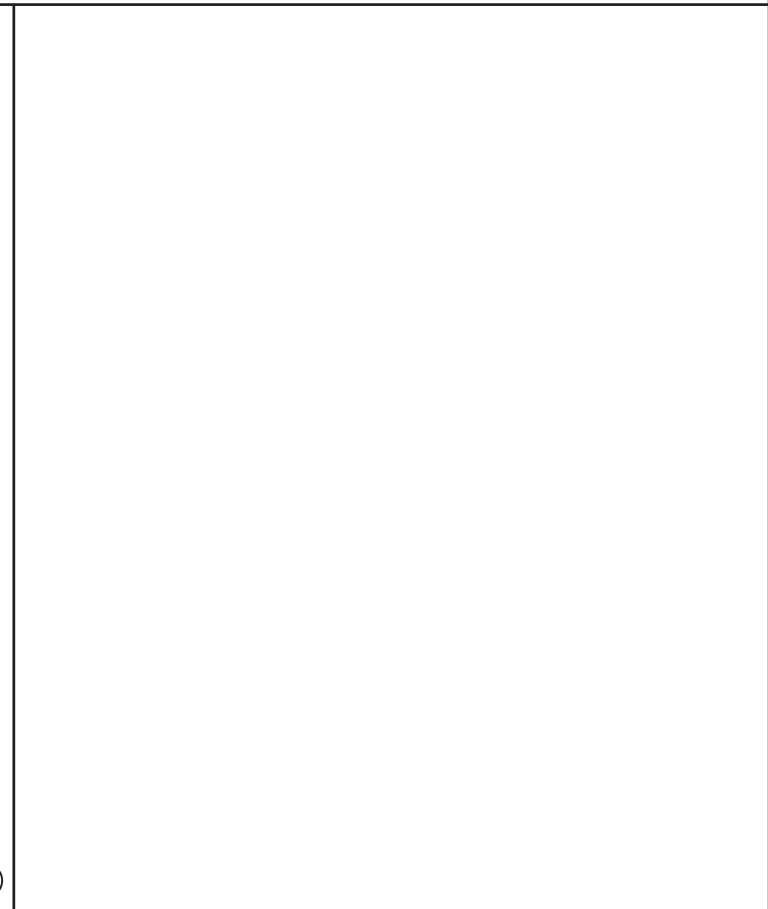
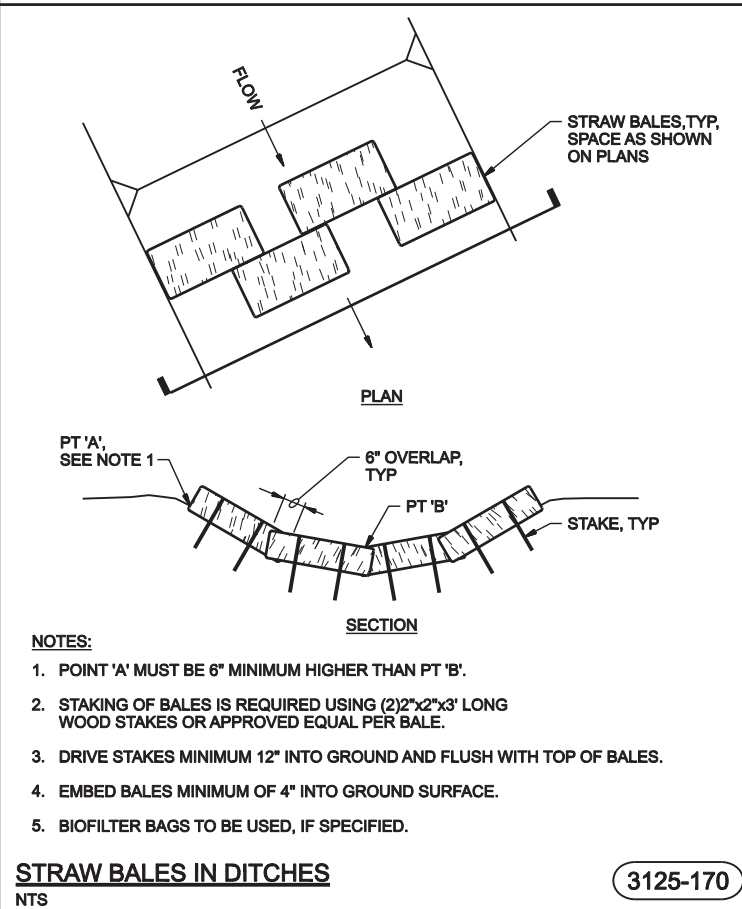
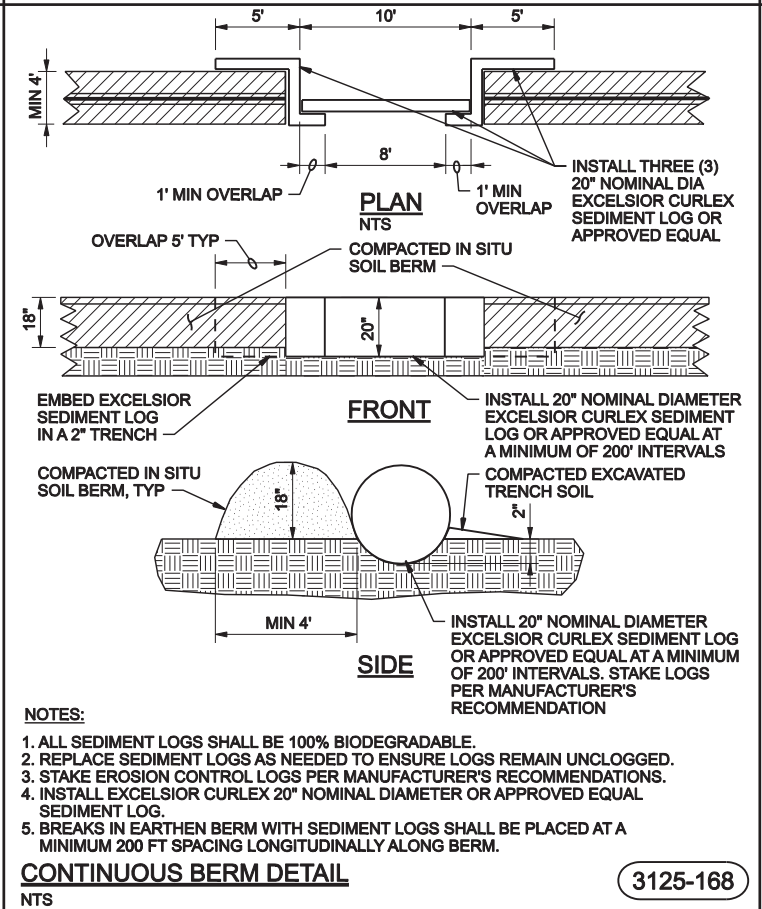
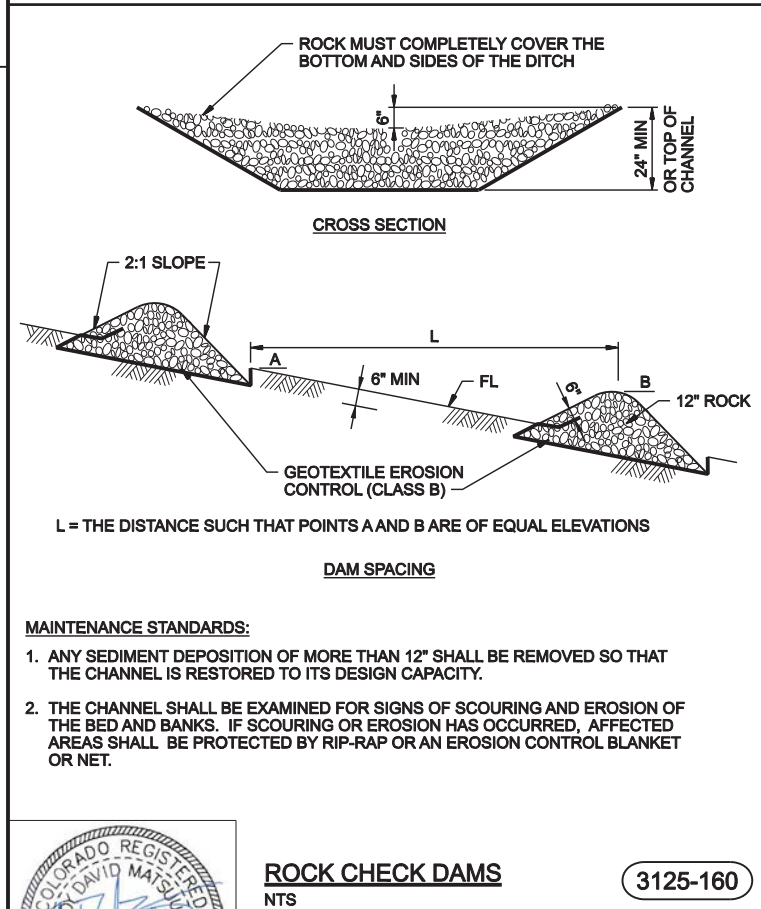
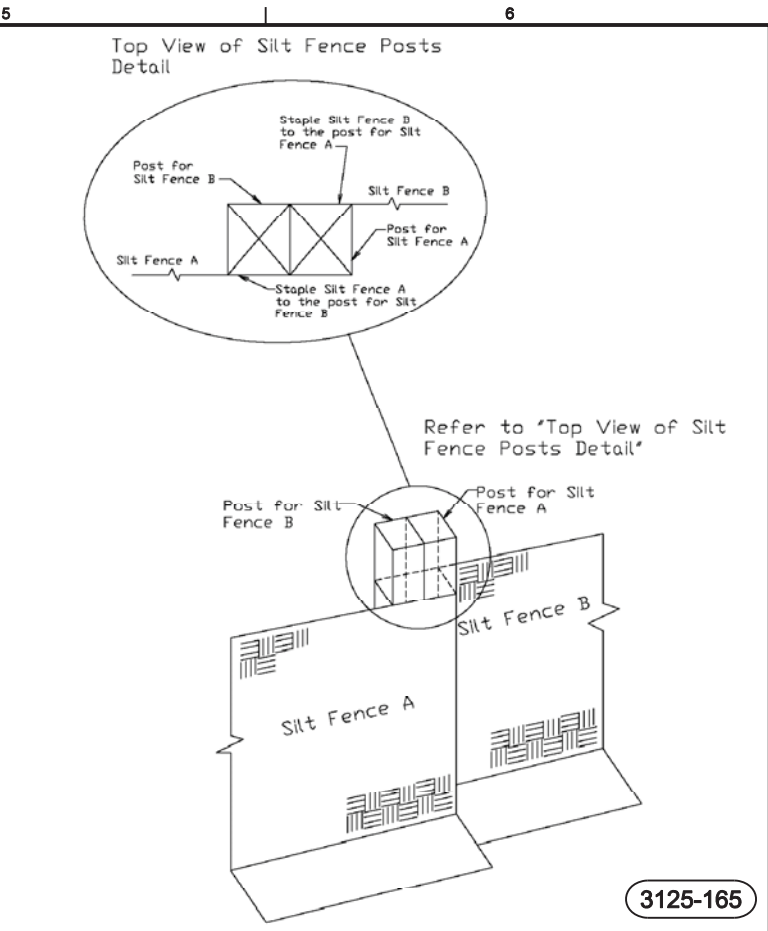
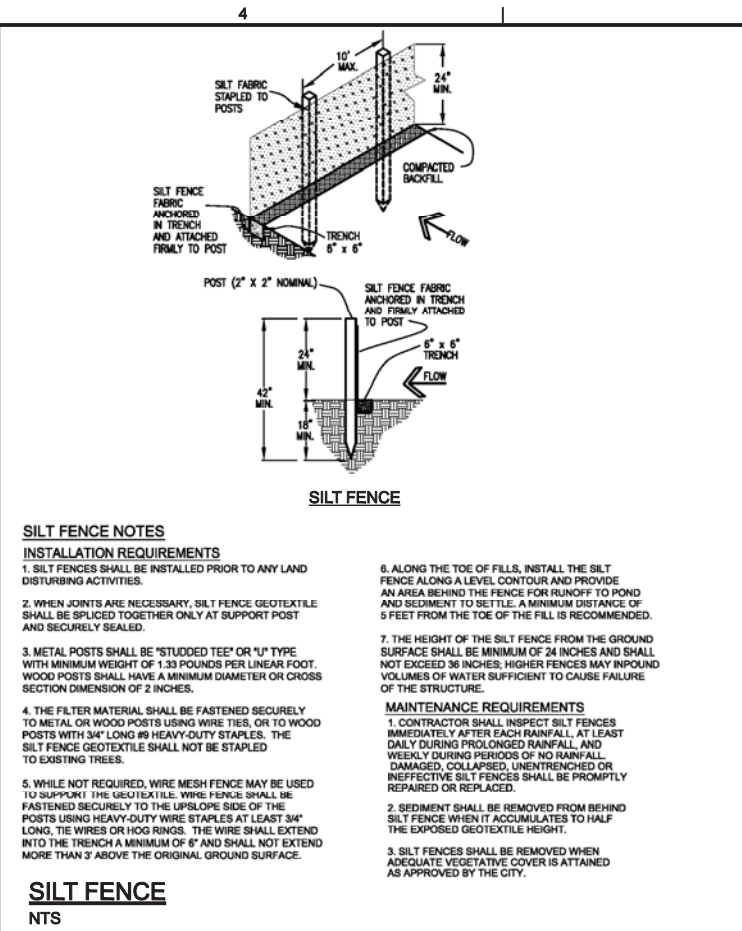
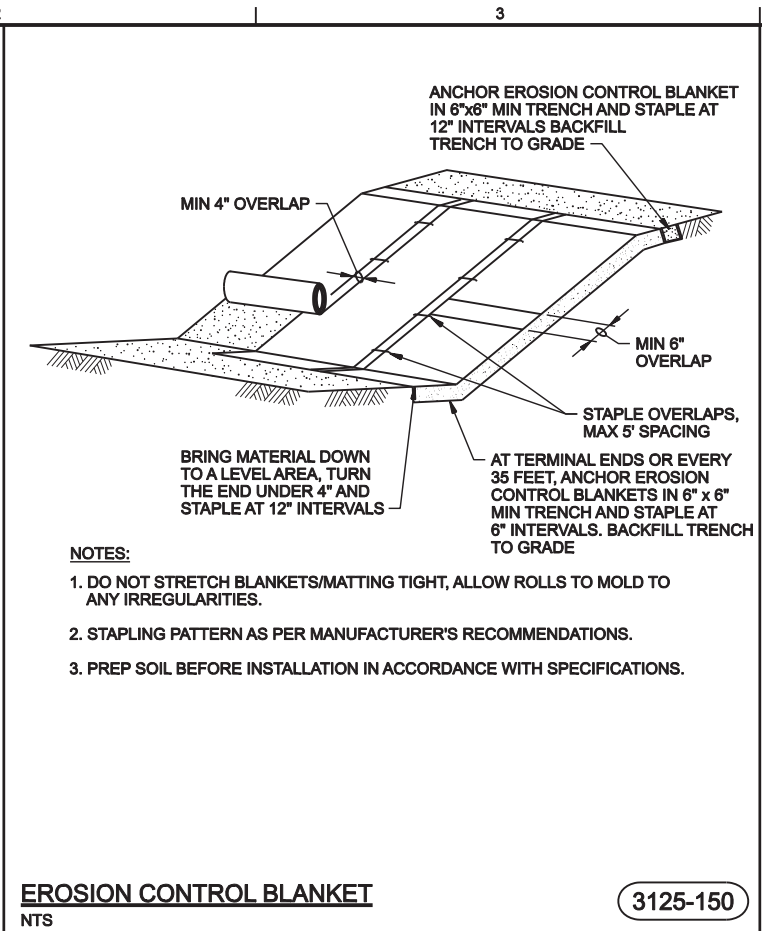
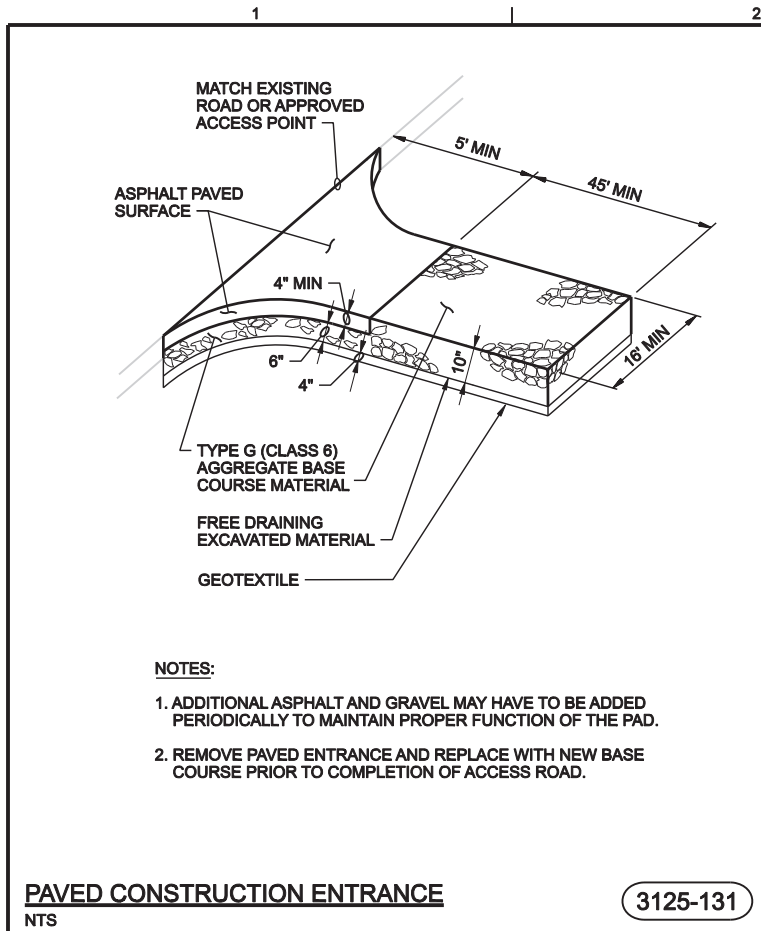
STANDARD DETAILS

SHEET 85

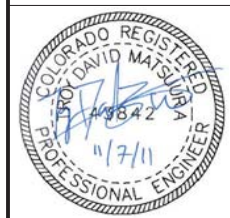
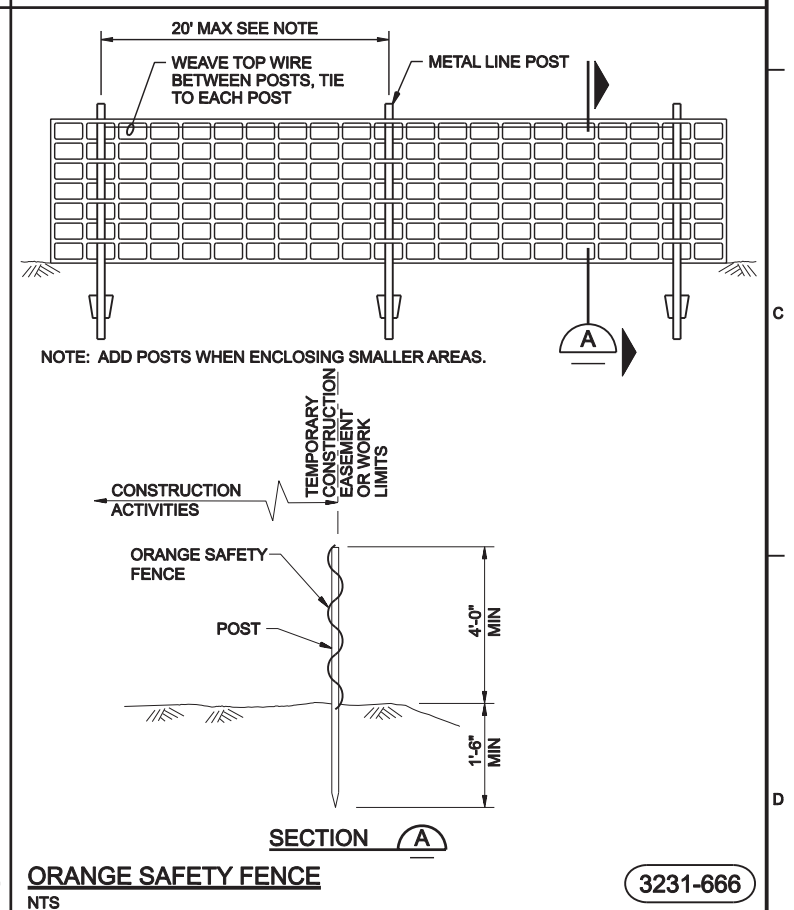
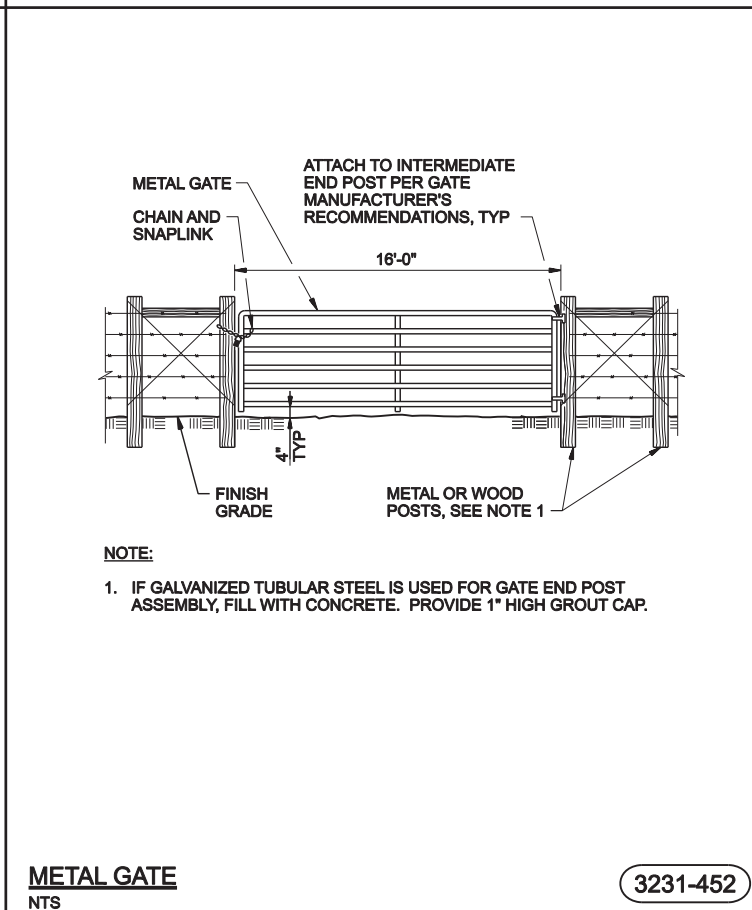
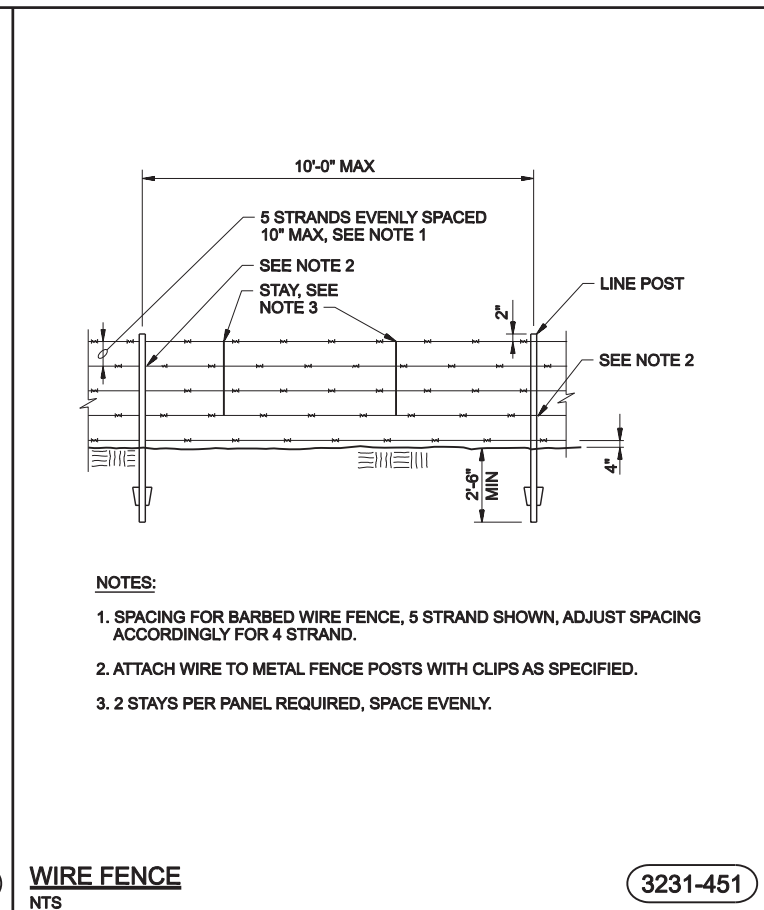
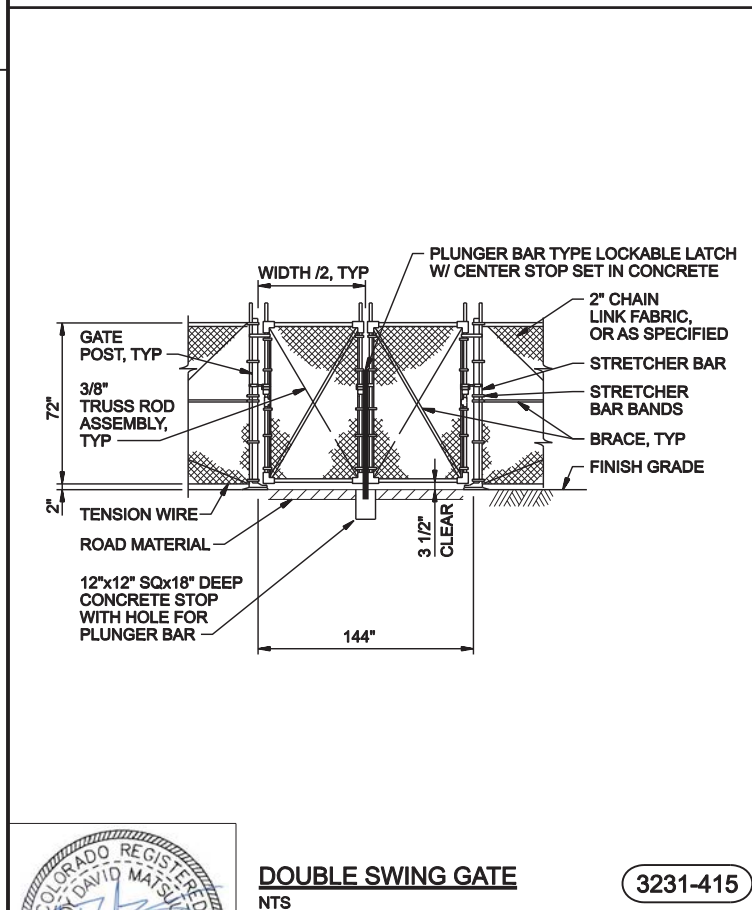
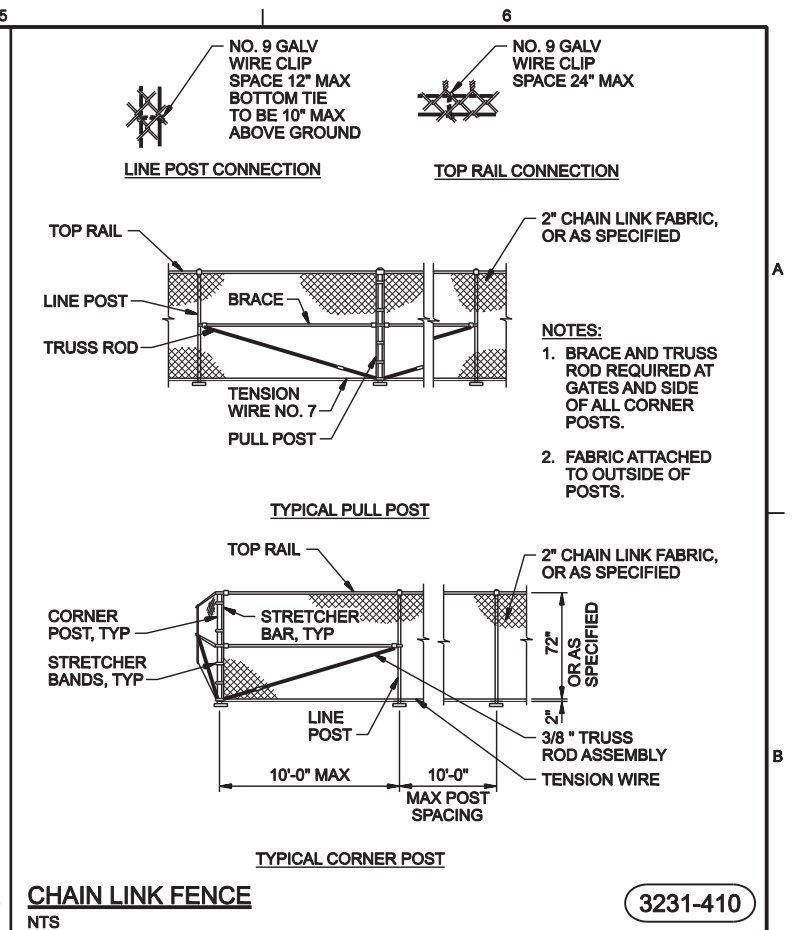
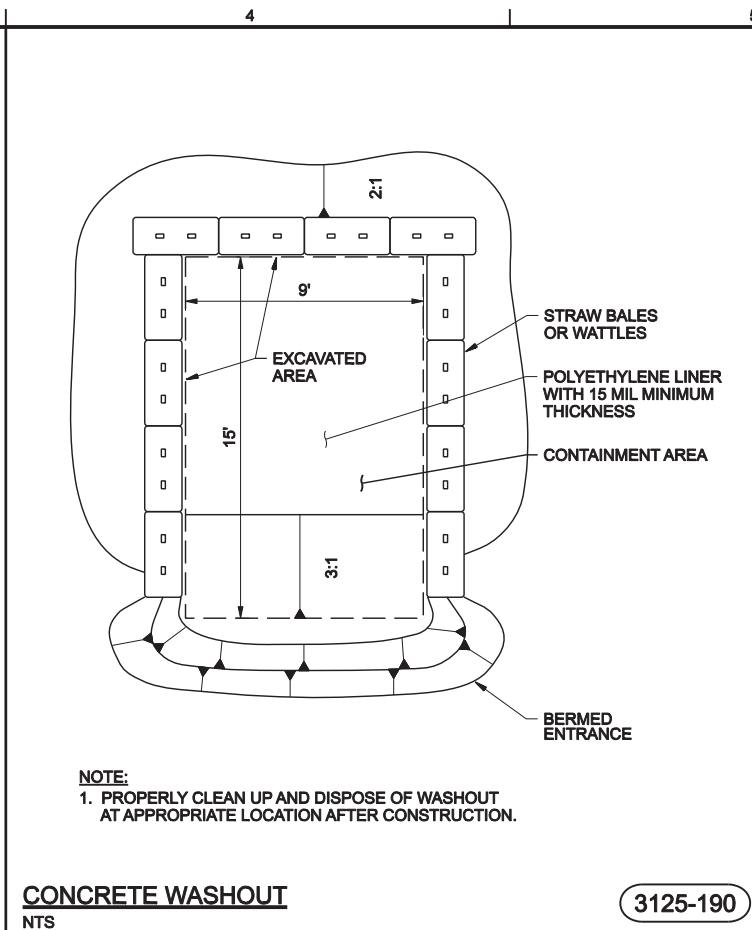
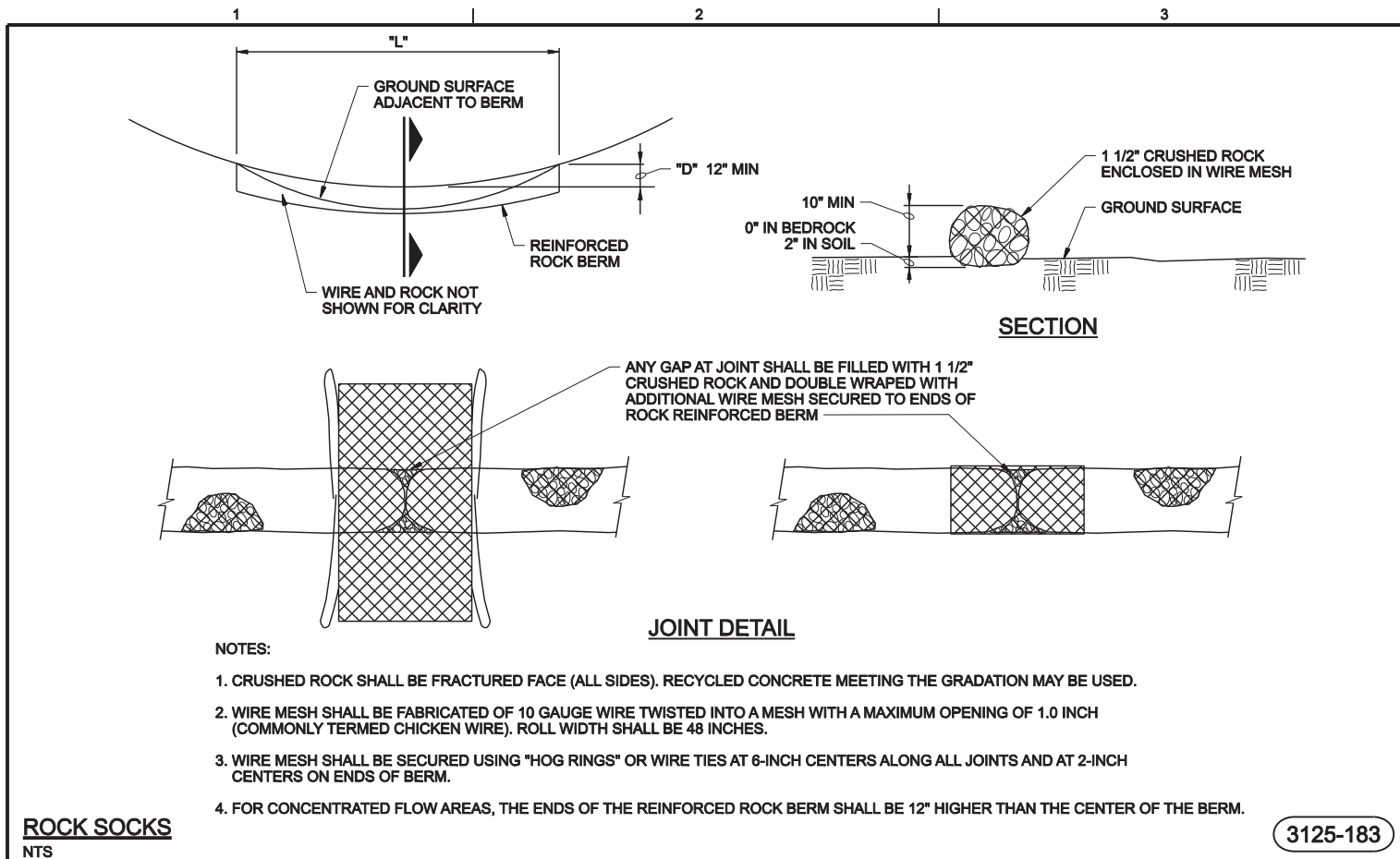
DWG S3-SD-5

DATE NOVEMBER 2011

PROJ 425190.S3.03



DSGN E FORD		NO.		DATE		REVISION		BY		APVD		VERIFY SCALE		CH2MHILL		SOUTHERN DELIVERY SYSTEM		STANDARD DETAILS		SHEET 86	
DR B NORVILLE												BAR IS ONE INCH ON ORIGINAL DRAWING.		Colorado Springs, CO 80903		RAW WATER PIPELINE S3		STANDARD DETAILS		DWG S3-SD-6	
CHK B SPILLER												IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.								DATE NOVEMBER 2011	
APVD T MATSUURA																				PROJ 425190.S3.03	



DSGN	NO.	DATE	REVISION	BY	APVD
E FORD					
DR B NORVILLE					
CHK B SPILLER					
APVD T MATSUURA					

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SOUTHERN DELIVERY SYSTEM
RAW WATER PIPELINE S3

STANDARD DETAILS
STANDARD DETAILS

SHEET	87
DWG	S3-SD-7
DATE	NOVEMBER 2011
PROJ	425190.S3.03