



US Army Corps  
of Engineers®  
Little Rock District

# JOINT PUBLIC NOTICE

CORPS OF ENGINEERS – STATE OF ARKANSAS

Application Number: 2014-00284-1

Date: September 13, 2016

Comments Due: October 10, 2016

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TO WHOM IT MAY CONCERN: **Comments are invited on the work described below. Please see the Public Involvement section for details on submitting comments.**

Point of Contact. If additional information is desired, please contact the project manager, Christopher Davies, telephone number: (501) 324-5295, mailing address: Little Rock District Corps of Engineers, Regulatory Division, PO Box 867, Little Rock, Arkansas 72203-0867, email address: [Christopher.G.Davies@usace.army.mil](mailto:Christopher.G.Davies@usace.army.mil)

Project Information. Pursuant to Section 404 of the Clean Water Act (33 U.S. Code 1344), notice is hereby given that

**City of Siloam Springs  
PO Box 80  
400 North Broadway  
Siloam Springs, Arkansas 72761**

has requested authorization for the placement of dredged and fill material in waters of the United States associated with a drainage improvement project. The proposed project is located in an unnamed tributary of Sager Creek, in the SW ¼ of section 1, T. 17 N., R. 34 W., Siloam Springs, Benton County, Arkansas.

The basic purpose of the project is flood damage reduction. The overall purpose of the project is to cut and fill approximately 1,249 linear feet of ephemeral stream with a concrete lining to promote greater hydrological efficiency and prevent flooding of adjacent homes. The project is water dependent.

Approximately 1,249 linear feet of ephemeral stream channel would be cut and filled with concrete channel lining to decrease flooding in the nearby backyards and homes. The ephemeral drain would be cut and filled with concrete to resemble a classic trapezoidal concrete channel. The new stream channel would be filled to 2% grade with some sections being 14 feet and some 20 feet wide. The three existing 36-inch diameter culverts at the terminus of the project would be replaced by two 60-inch diameter culverts. This culvert replacement would increase the carrying capacity of the stream to handle a 25-year flood event and decrease downstream erosion.

The impacted site is an ephemeral stream that only flows after significant rain events. The substrate is predominately gravel with some cobble and bedrock present. This reach of stream has been historically impacted by urbanization activities. This reach traverses the Rolling Hills Subdivision, and many houses are located within 50 feet of the stream. Flooding of houses and yards has occurred during significant rain events.

The proposed mitigation site is located in Sager Creek, in the SW ¼ of section 32, T. 18 N., R. 33 W., Siloam Springs, Benton County, Arkansas. Restoration of a 1,330-foot reach of Sager Creek would mitigate losses of form and function due to the installation of a concrete lined channel in its unnamed tributary. Sager Creek is a perennial stream listed on the Arkansas 2008 impaired list with a cause of impairment as nitrate. The creation, enhancement, and protection of a 50-foot riparian buffer on each of Sager Creek would improve the removal of excess pollutants that are entering Sager Creek via stormwater runoff.

Natural channel design techniques would be utilized in developing the channel restoration for Sager Creek. Channel habitat would be enhanced with instream structures such as riffles, step pools, veins, and/or root wads as appropriate. Stream banks would be stabilized using appropriate practices such as erosion control blankets, wattles, and rock as needed. Banks would be seeded with a seasonal and perennial mixture of native quick growing grasses and flowers for erosion control and vegetative cover. Cross veins, or similar features, would be installed to redirect velocity, create step pools, and maintain channel grade as needed.

The location and general plan for the proposed work are shown on the enclosed sheets.

Water Quality Certification. By copy of this public notice, the applicant is requesting water quality certification from the Arkansas Department of Environmental Quality (ADEQ) in accordance with Section 401(a)(1) of the Clean Water Act. Upon completion of the comment period and a public hearing, if held, a determination relative to water quality certification will be made. Evidence of this water quality certification or waiver of the right to certify must be submitted prior to the issuance of a Corps of Engineers permit.

Cultural Resources. A Corps staff archeologist will review topographic maps, the National Register of Historic Places, and other data on reported sites in the area. The District Engineer invites responses to this public notice from Native American Nations or tribal governments; Federal, State, and local agencies; historical and archeological societies; and other parties likely to have knowledge of or concerns with historic properties in the area.

Endangered Species. Our preliminary determination is that the proposed activity will not affect listed Endangered Species or their critical habitat. A copy of this notice is being furnished to the U.S. Fish and Wildlife Service and appropriate state agencies and constitutes a request to those agencies for information on whether any listed or proposed-to-be-listed endangered or threatened species may be present in the area which would be affected by the proposed activity.

Floodplain. We are providing copies of this notice to appropriate floodplain officials in accordance with 44 CFR Part 60 (Floodplain Management Regulations Criteria for Land Management and Use) and Executive Order 11988 on Floodplain Management.

Section 404(b)(1) Guidelines. The evaluation of activities to be authorized under this permit which involves the discharge of dredged or fill material will include application of guidelines promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act. These guidelines are contained in 40 Code of Federal Regulations (CFR) 230.

Public Involvement. Any interested party is invited to submit to the above-listed POC written comments or objections relative to the proposed work on or before **October 10, 2016**. Substantive comments, both favorable and unfavorable, will be accepted and made a part of the record and will receive full consideration in determining whether this work would be in the public interest. The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request in writing within the comment period specified in this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. The District Engineer will determine if the issues raised are substantial and whether a hearing is needed for making a decision.

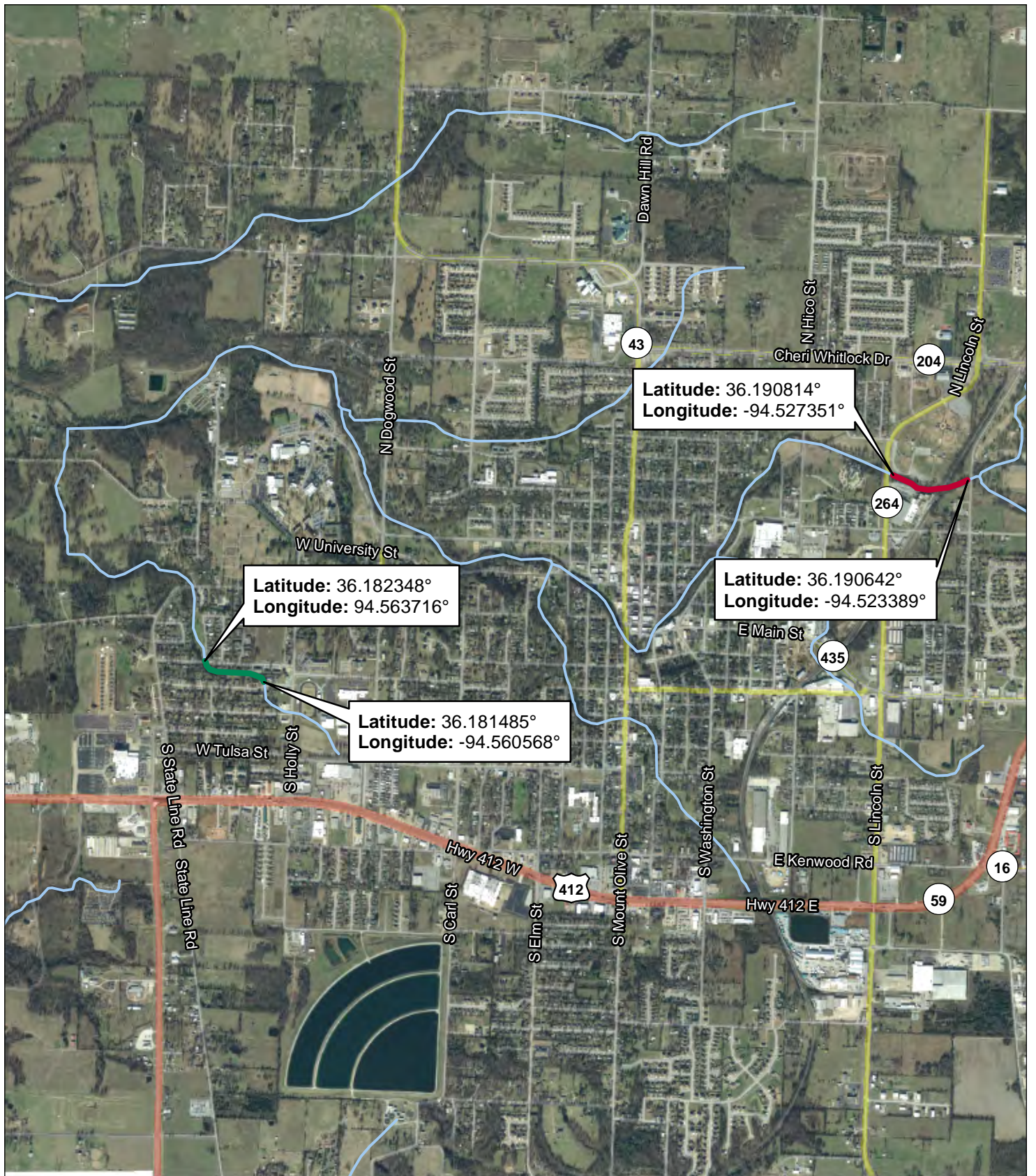
**NOTE:** The mailing list for this Public Notice is arranged by state and county(s) where the project is located, and also includes any addressees who have asked to receive copies of all public notices. Please discard notices that are not of interest to you. If you have no need for any of these notices, please advise us so that your name can be removed from the mailing list.

Enclosures

Approximate Coordinates of Project Center

Latitude: **36.181860**                      Longitude: **-94.561869**

UTM Zone: **15**            North: **4005249**                      East: **359550**



Latitude: 36.190814°  
Longitude: -94.527351°

Latitude: 36.182348°  
Longitude: -94.563716°

Latitude: 36.190642°  
Longitude: -94.523389°

Latitude: 36.181485°  
Longitude: -94.560568°



2,600

Feet

- Mitigated Reach
- Impacted Reach
- Streams

SILOAM SPRINGS DRAINAGE PROJECT

WEST JEFFERSON DRAINAGE IMPROVEMENT

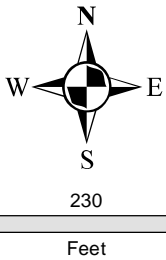
**ACTION NO. 2014-00284-1**




City of Siloam Springs  
**DRAINAGE IMPROVEMENT**  
Sec 1, T.17 N., R. 34 W.

Approved by: ENJ  
Checked by: ENJ  
Drawn by: ALB

September 2016

Sheet 1 of 9



-  Streams
-  Riparian Buffer Mitigation
-  In-Stream Mitigation

SILOAM SPRINGS DRAINAGE PROJECT

SAGER CREEK MITIGATION REACH

**ACTION NO. 2014-00284-1**  
 City of Siloam Springs  
**DRAINAGE IMPROVEMENT**  
 Sec 1, T.17 N., R. 34 W.  
 September 2016

Approved by: ENJ  
 Checked by: ENJ  
 Drawn by: ALB

# DEVELOPMENT PLANS FOR W. JEFFERSON DRAINAGE PROJECT SILOAM SPRINGS, ARKANSAS

### LOCAL UTILITY CONTACTS

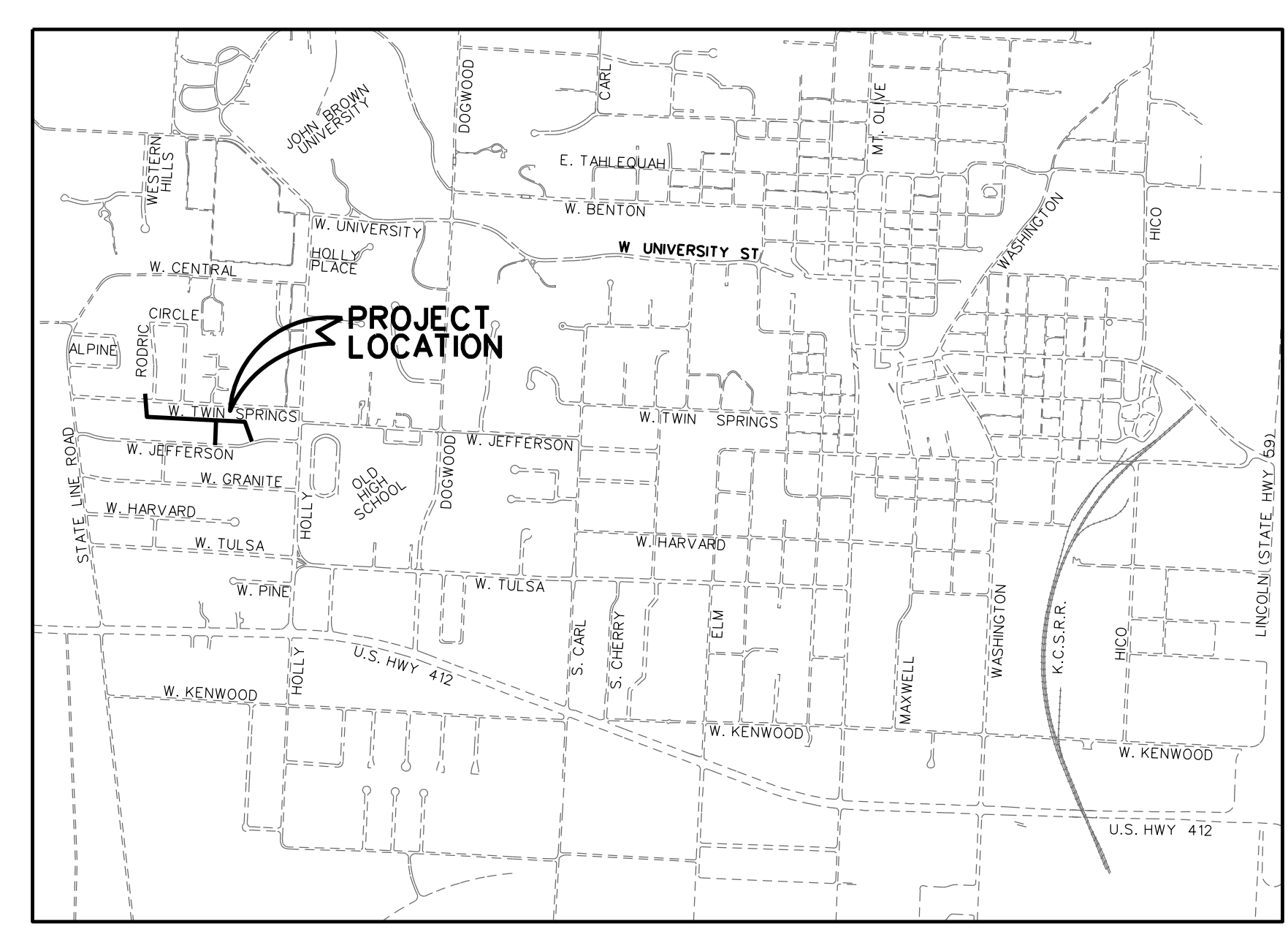
Water and Wastewater  
City of Siloam Springs  
Dan Farine, Maintenance Supt.  
(479)238-0927

Electric  
City of Siloam Springs  
Johnny Bland  
(479)524-3777

Natural Gas  
SourceGas  
Wayne Meek  
(479)549-7834

Telephone  
Centurytel  
Mike Edwards, Engineer  
(479)524-9943

Cable TV  
Cox Communications, Inc.  
Terry Frank  
(479)871-2432



### INDEX

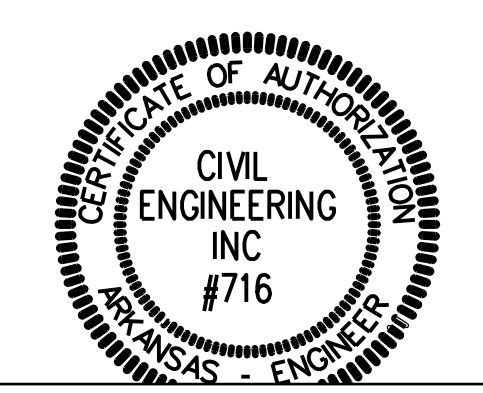
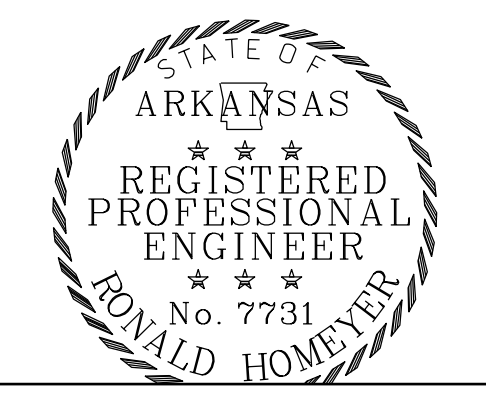
- 1 TITLE SHEET
- 2 GRADING DETAIL AND STORM DRAINAGE PROFILES
- 3 GRADING DETAIL AND STORM DRAINAGE PROFILES
- 4 CROSS SECTIONS
- 5 SEDIMENT AND EROSION CONTROL PLAN

### DETAILS

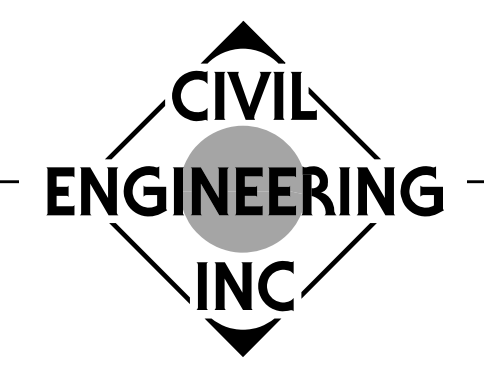
- 1 PAVING AND DRAINAGE DETAILS
- 2 SEDIMENT AND EROSION CONTROL DETAILS

PREPARED FOR  
**THE CITY OF  
SILOAM SPRINGS**

400 N. BROADWAY, P.O. BOX 80  
SILOAM SPRINGS, ARKANSAS 72761  
(479)524-5136



701 S. MT. OLIVE, P.O. BOX 12  
E-MAIL: mail@civilengineeringss.com

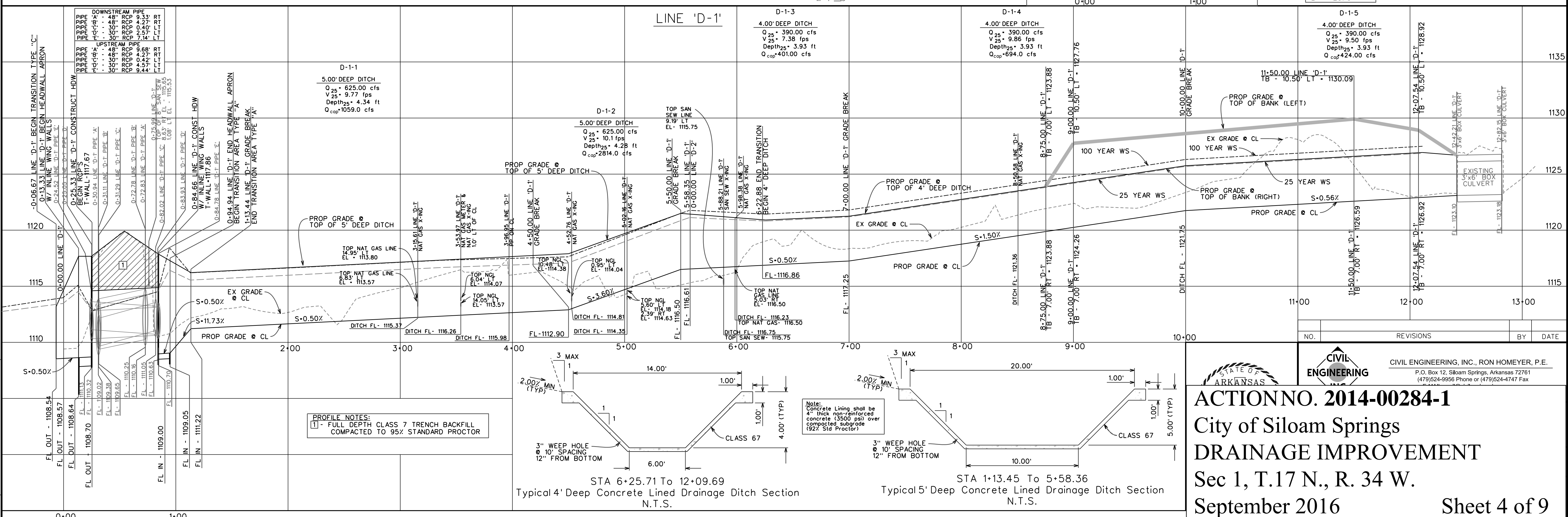
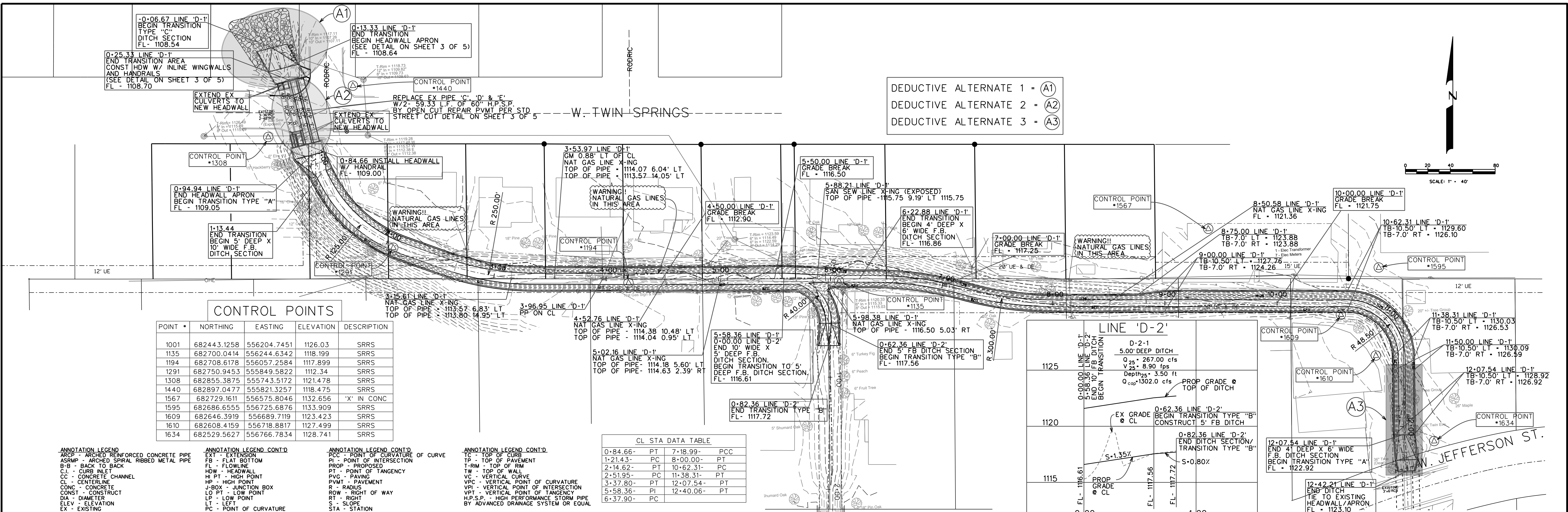


SILOAM SPRINGS, ARKANSAS 72761  
(479)524-9956 OFC - (479)524-4747 FAX

SURVEY PROVIDED BY:  
Johnson Surveying  
22450 Oakview Rd  
Siloam Springs, Arkansas 72761  
(479)524-9350

**ACTION NO. 2014-00284-1**  
City of Siloam Springs  
**DRAINAGE IMPROVEMENT**  
Sec 1, T.17 N., R. 34 W.  
September 2016

2014-00284-1  
REVISED  
DATE: 2/17/2014  
PFL



CIVIL ENGINEERING

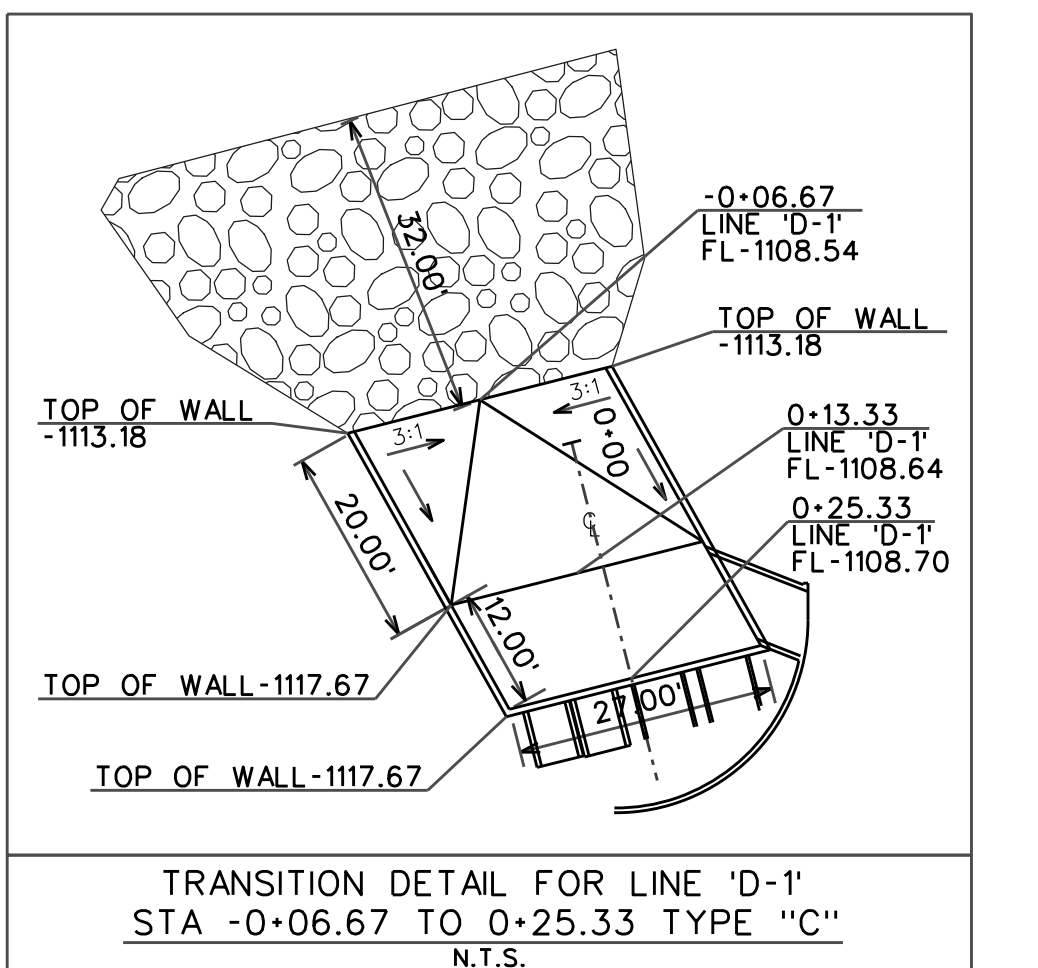
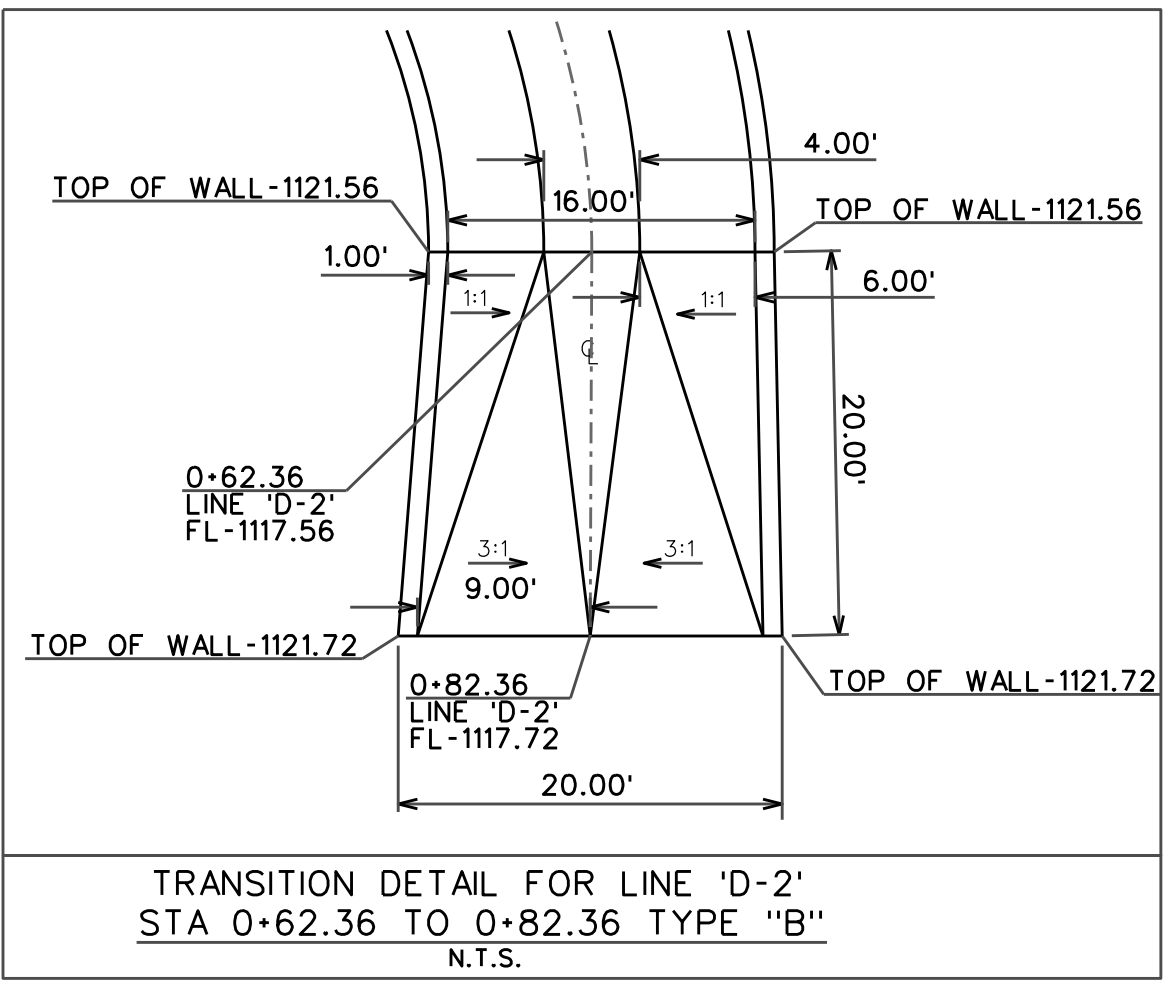
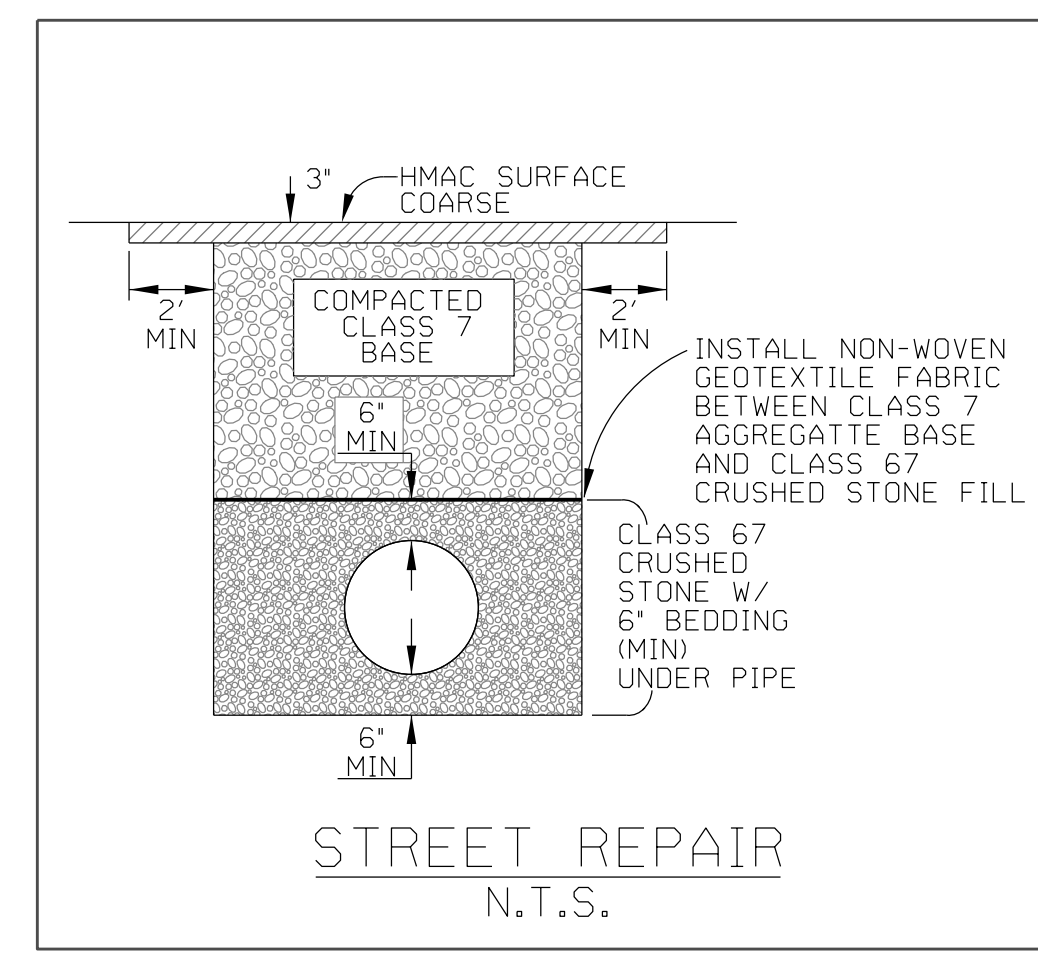
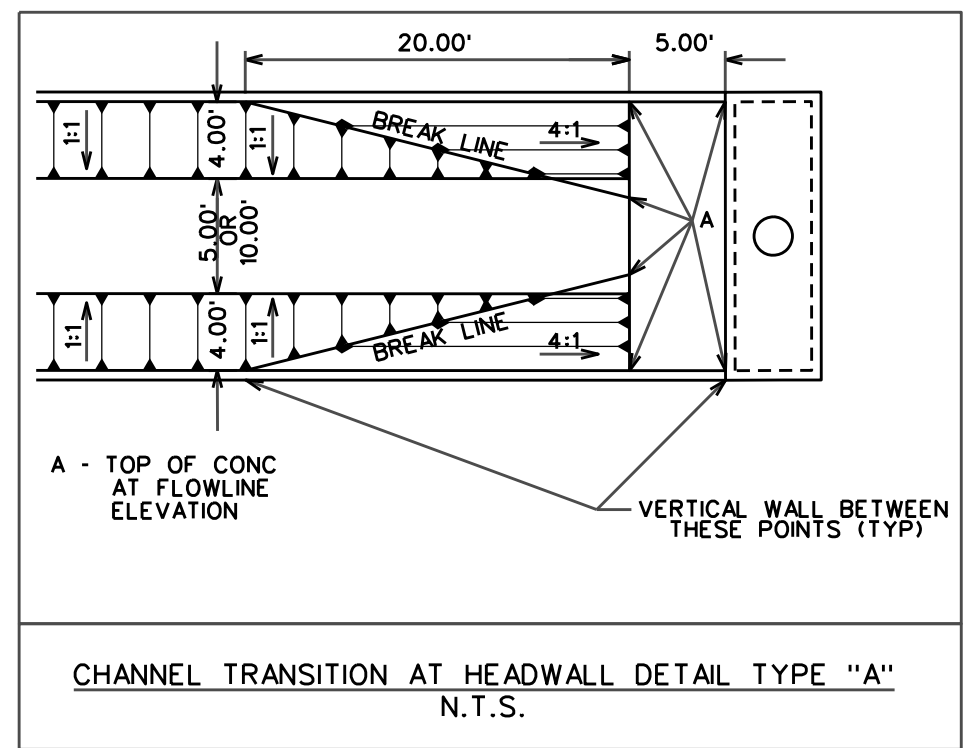
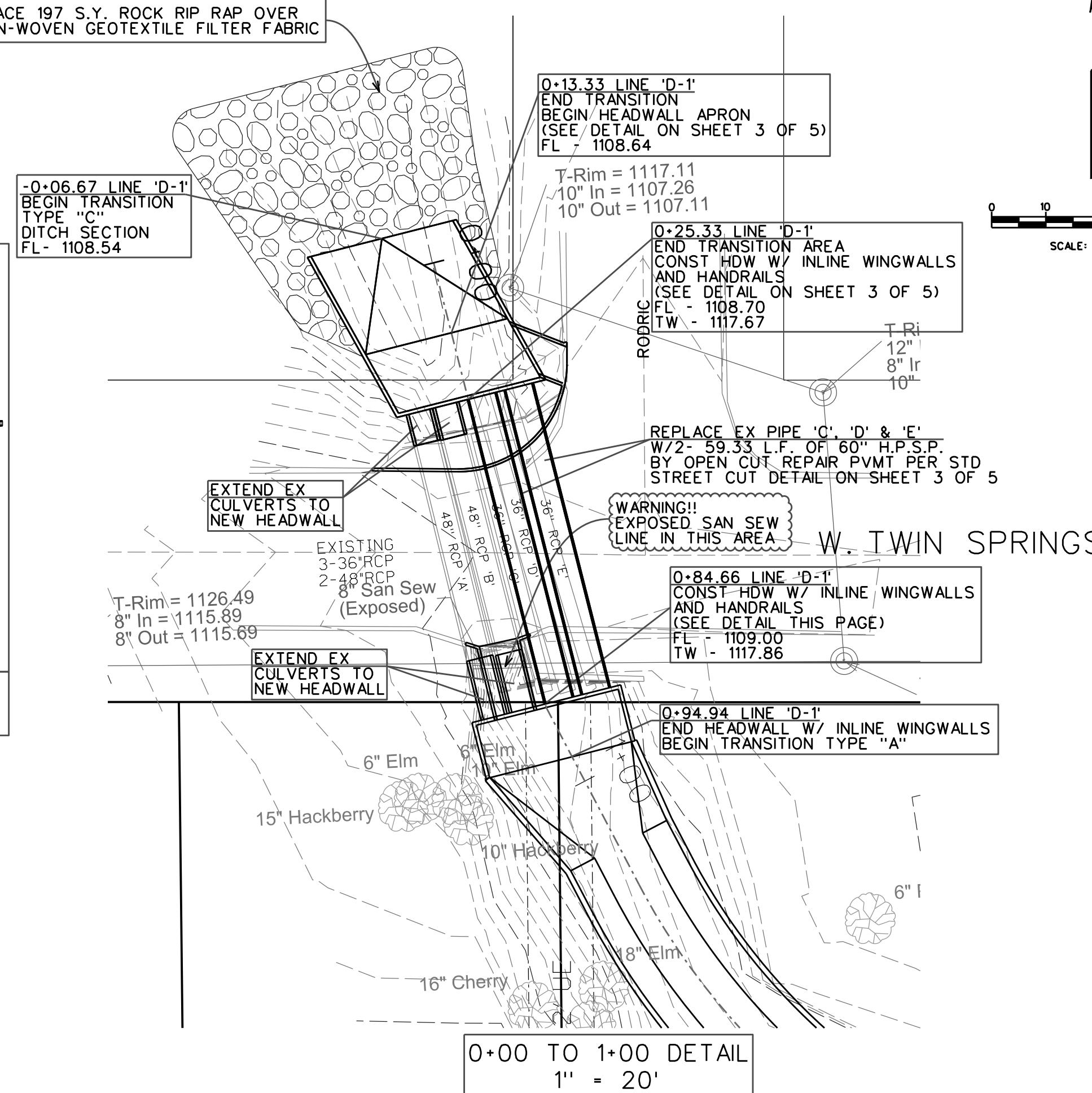
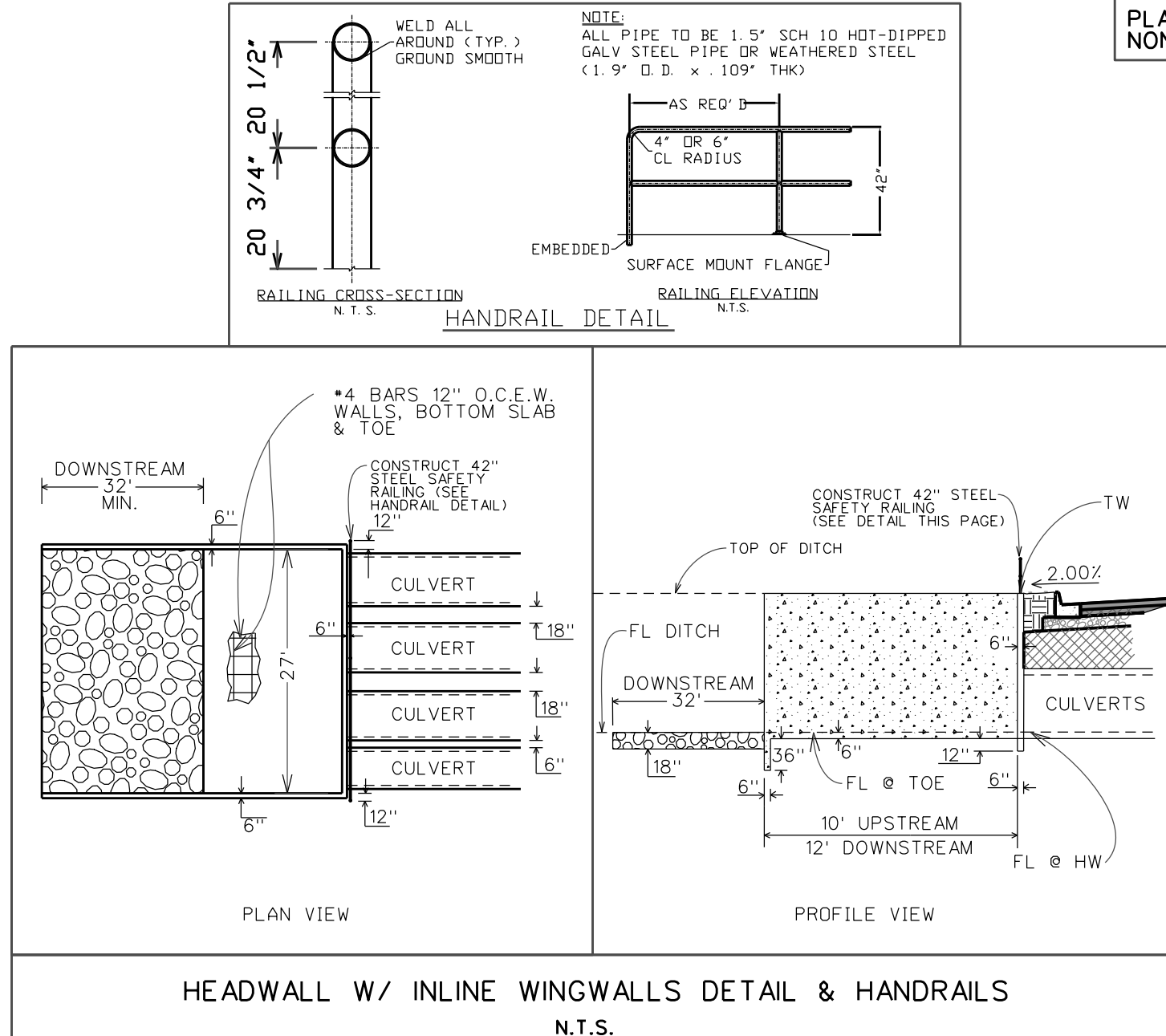
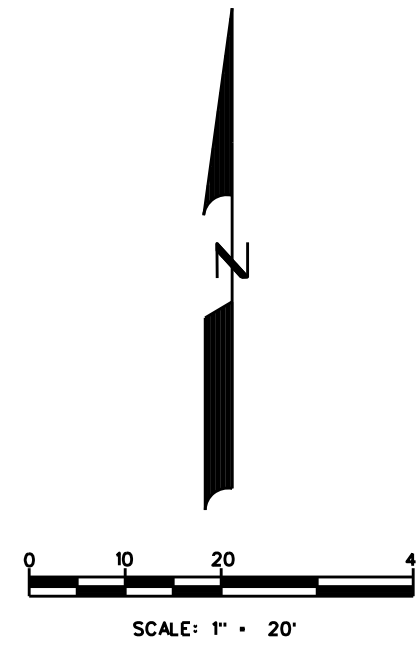
CIVIL ENGINEERING, INC., RON HOMEYER, P.E.  
 P.O. Box 12, Siloam Springs, Arkansas 72761  
 (479)524-9956 Phone or (479)524-4747 Fax

**ACTION NO. 2014-00284-1**

City of Siloam Springs  
 DRAINAGE IMPROVEMENT  
 Sec 1, T.17 N., R. 34 W.  
 September 2016

Sheet 4 of 9

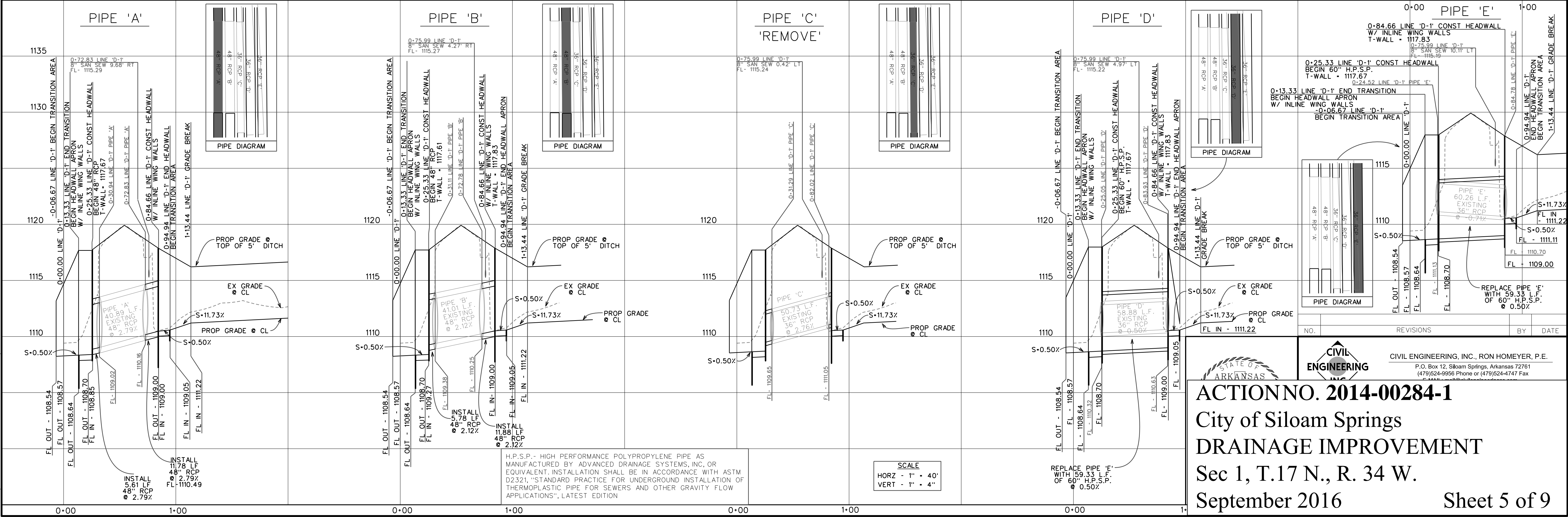
**PAVING NOTES:**  
 1. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER GEOTECHNICAL ENGINEERS REPORT (IF PROVIDED).



HEADWALL W/ INLINE WINGWALLS DETAIL & HANDRAILS  
N.T.S.

TRANSITION DETAIL FOR LINE 'D-2'  
STA 0+62.36 TO 0+82.36 TYPE "B"  
N.T.S.

TRANSITION DETAIL FOR LINE 'D-1'  
STA -0+06.67 TO 0+25.33 TYPE "C"  
N.T.S.

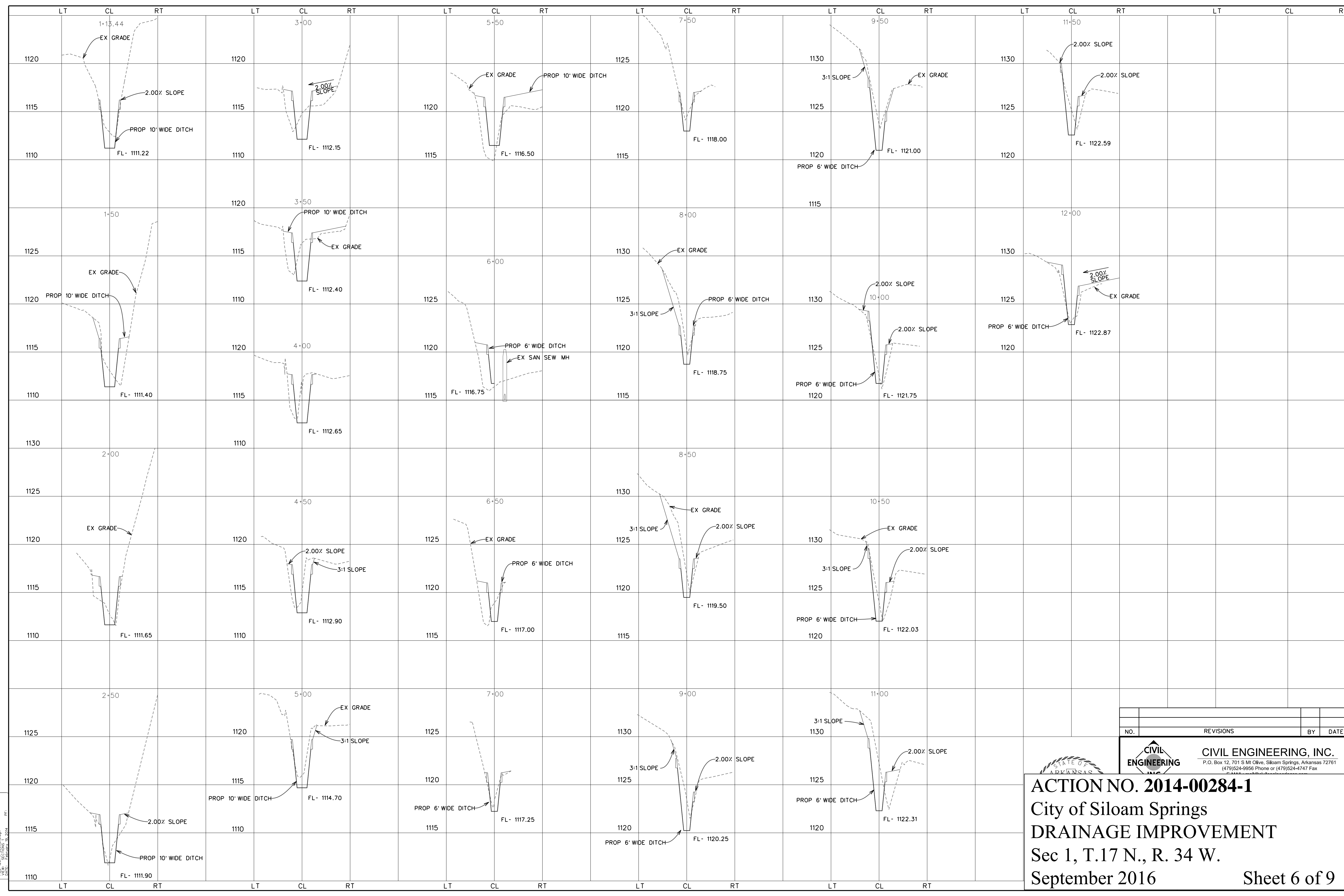


SCALE  
 HORZ - 1" = 40'  
 VERT - 1" = 4'

CIVIL ENGINEERING, INC., RON HOMEYER, P.E.  
 P.O. Box 12, Siloam Springs, Arkansas 72761  
 (479)524-9956 Phone or (479)524-4747 Fax

**ACTION NO. 2014-00284-1**  
**City of Siloam Springs**  
**DRAINAGE IMPROVEMENT**  
 Sec 1, T.17 N., R. 34 W.  
 September 2016





NO.	REVISIONS	BY	DATE


**CIVIL ENGINEERING, INC.**  
 P.O. Box 12, 701 S Mt Olive, Siloam Springs, Arkansas 72761  
 (479)524-9956 Phone or (479)524-4747 Fax

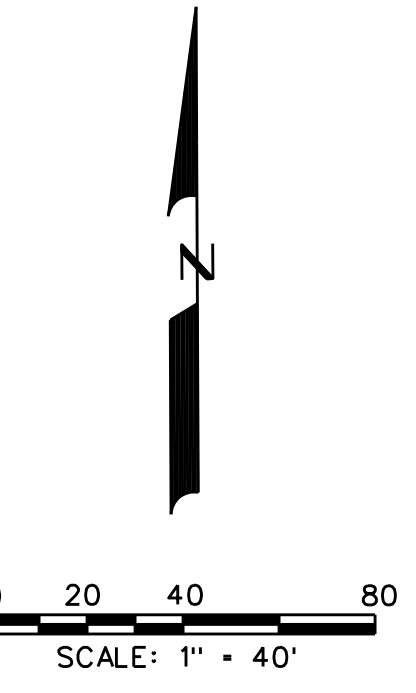
**ACTION NO. 2014-00284-1**  
**City of Siloam Springs**  
**DRAINAGE IMPROVEMENT**  
**Sec 1, T.17 N., R. 34 W.**  
**September 2016**
**Sheet 6 of 9**

FILE: 10313-2460.dwg  
 DATE: 12/10/16  
 PLOT: 12/10/16 9:20:18 AM

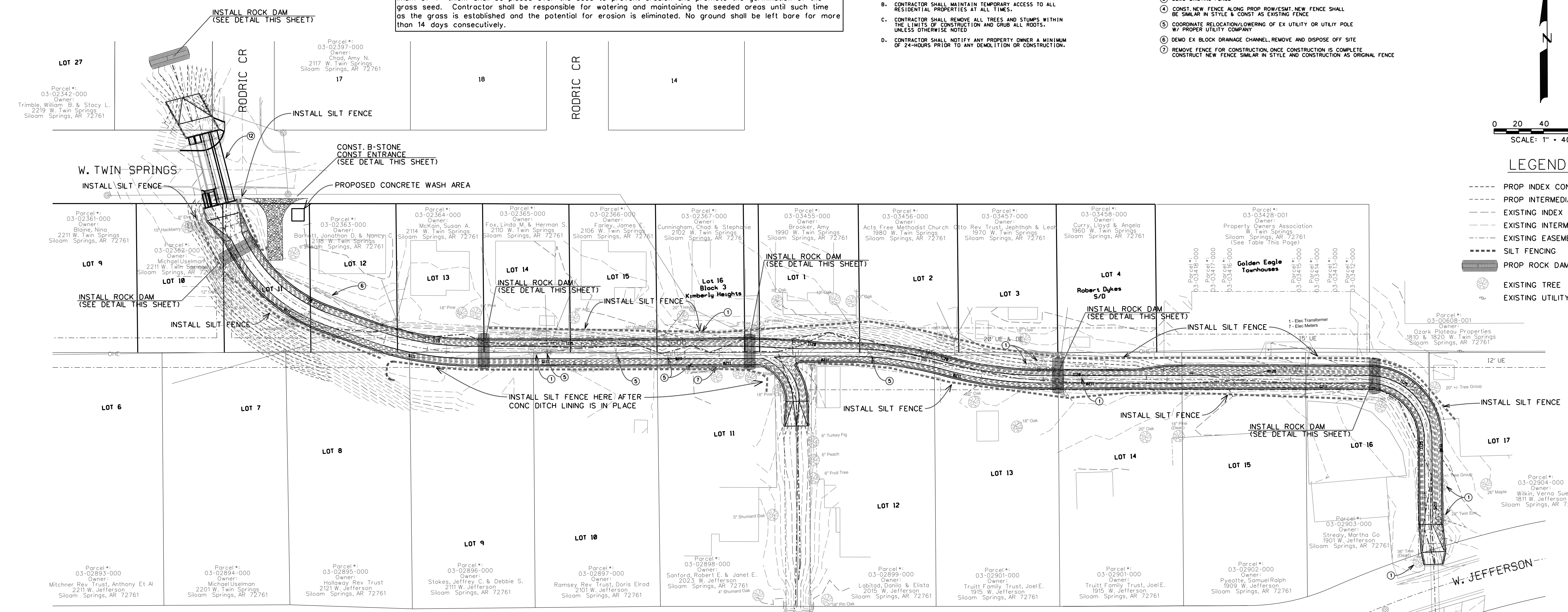
**NOTE:**  
All portions of the site which have the vegetative cover removed as a result of the project construction shall be graded smooth, grass seed shall be spread and a protective mulch cover of wheat straw (a minimum of 4" thick) shall be placed over the seed to prevent erosion and promote the germination of the grass seed. Contractor shall be responsible for watering and maintaining the seeded areas until such time as the grass is established and the potential for erosion is eliminated. No ground shall be left bare for more than 14 days consecutively.

- NOTES:**
- A. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO DEMOLITION.
  - B. CONTRACTOR SHALL MAINTAIN TEMPORARY ACCESS TO ALL RESIDENTIAL PROPERTIES AT ALL TIMES.
  - C. CONTRACTOR SHALL REMOVE ALL TREES AND STUMPS WITHIN THE LIMITS OF CONSTRUCTION AND GRUB ALL ROOTS, UNLESS OTHERWISE NOTED.
  - D. CONTRACTOR SHALL NOTIFY ANY PROPERTY OWNER A MINIMUM OF 24-HOURS PRIOR TO ANY DEMOLITION OR CONSTRUCTION.

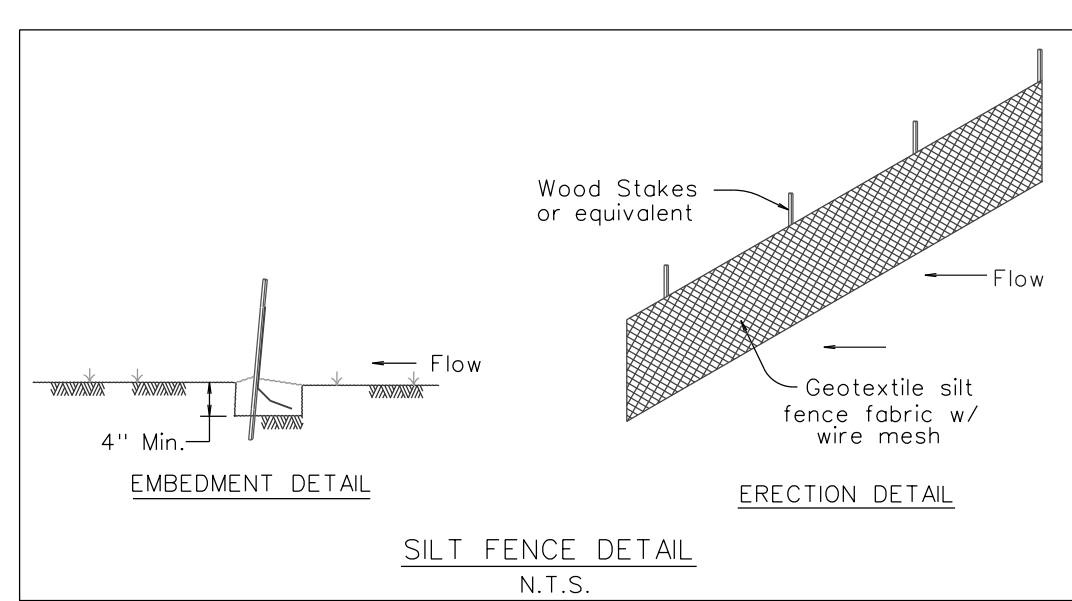
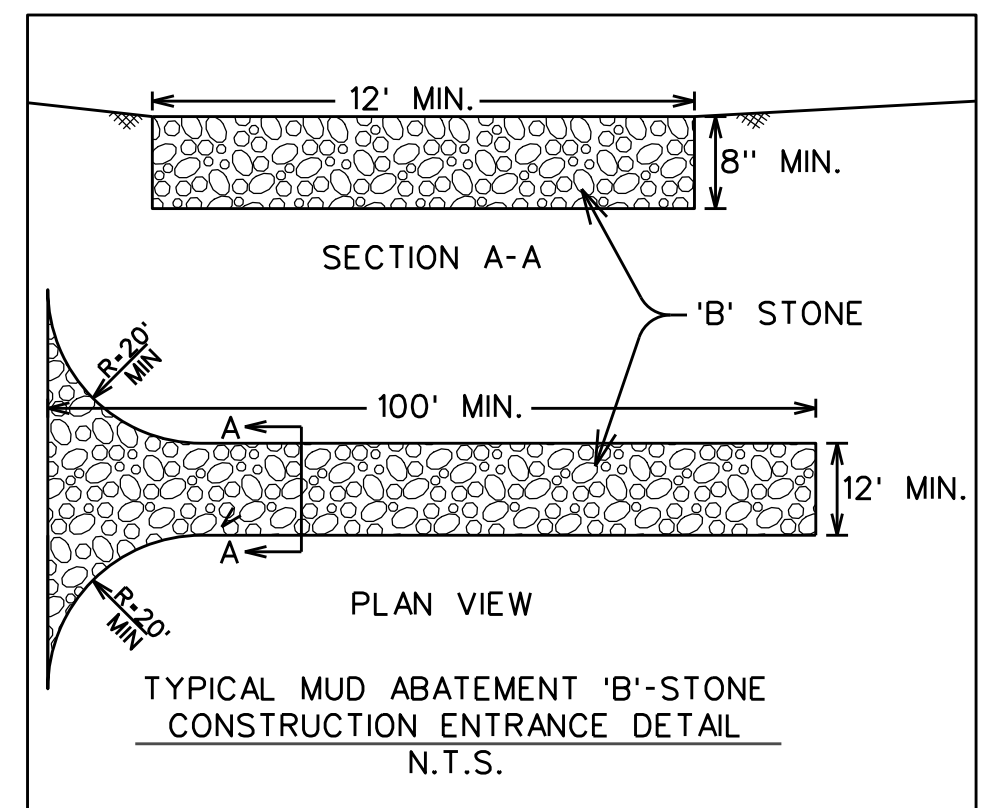
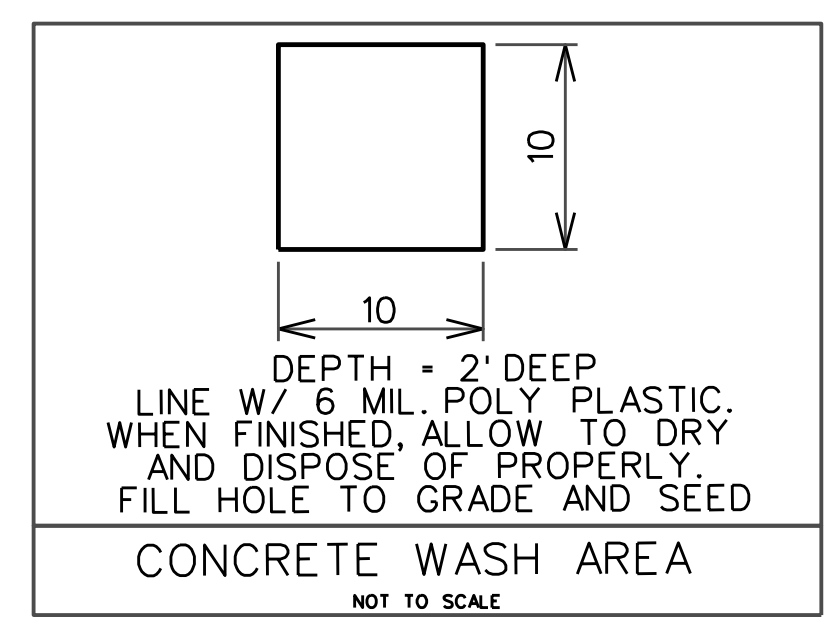
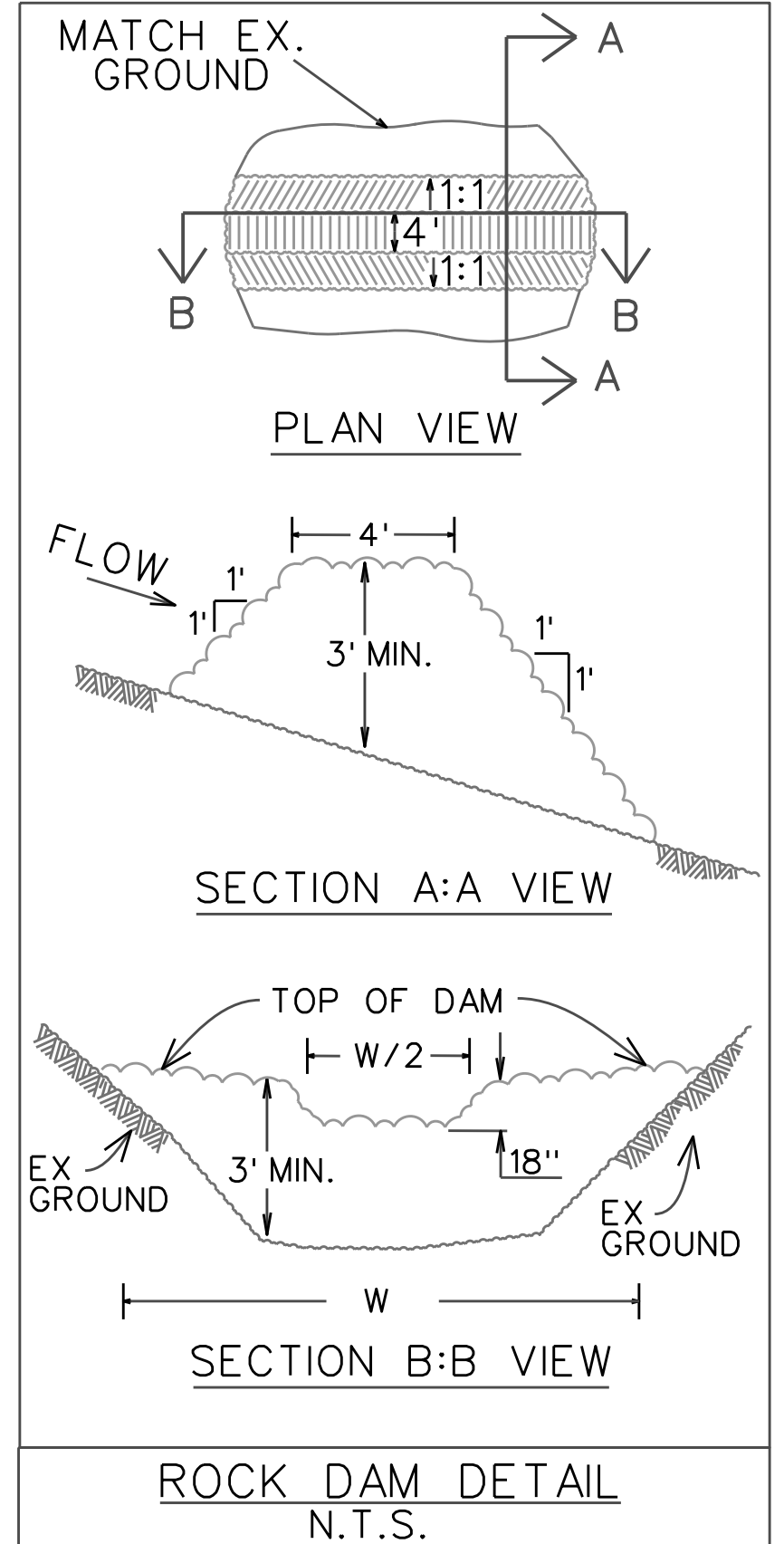
- DEMOLITION NOTES:**
- 1. REMOVE AND DISPOSE EX. TREE/SHRUB
  - 2. PROTECT AND PRESERVE EX. TREE/SHRUB (TRIM CANOPY AS NEEDED FOR CONST)
  - 3. DEMO EXISTING FENCE
  - 4. CONST. NEW FENCE ALONG PROP. ROW/ESMT. NEW FENCE SHALL BE SIMILAR IN STYLE & CONST. AS EXISTING FENCE.
  - 5. COORDINATE RELOCATION/LOWERING OF EX. UTILITY OR UTILITY POLE W/ PROPER UTILITY COMPANY
  - 6. DEMO EX. BLOCK DRAINAGE CHANNEL, REMOVE AND DISPOSE OFF SITE
  - 7. REMOVE FENCE FOR CONSTRUCTION, ONCE CONSTRUCTION IS COMPLETE CONSTRUCT NEW FENCE SIMILAR IN STYLE AND CONSTRUCTION AS ORIGINAL FENCE



- LEGEND**
- PROP INDEX CONTOUR
  - PROP INTERMEDIATE CONTOUR
  - EXISTING INDEX CONTOUR
  - EXISTING INTERMEDIATE CONTOUR
  - EXISTING EASEMENT
  - SILT FENCING
  - PROP ROCK DAM
  - EXISTING TREE
  - EXISTING UTILITY POLE




Parcel #: 03-02361-000 Owner: Blaine, Nina 2211 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-02362-000 Owner: Michael Useitman 2211 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-02363-000 Owner: Barnett, Jonathan D. & Nancy C. 2118 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-02364-000 Owner: McKain, Susan A. 2114 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-02365-000 Owner: Fox, Linda M. & Herman S. 2110 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-02366-000 Owner: Farley, James E. 2106 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-02367-000 Owner: Cunningham, Chad & Stephanie 2102 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-03455-000 Owner: Brooks, Amy 1990 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-03456-000 Owner: Acts Free Methodist Church 1980 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-03457-000 Owner: Cto Rev. Trust, Jeppath & Leat 1970 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-03458-000 Owner: Curry, Lloyd & Angela 1960 W. Twin Springs Siloam Springs, AR 72761	Parcel #: 03-03428-001 Owner: Property Owners Association Siloam Springs, AR 72761 (See Table This Page)
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- NOTES:**
- INSTALL SILT FENCE DOWNSTREAM FROM ANY AREAS WHERE FILL IS PLANNED TO BE PLACED.
  - ALL SILT FENCE IS TO BE PLACED PARALLEL TO GROUND CONTOURS SO THAT THE FENCE DOES NOT CHANNELIZE THE WATER

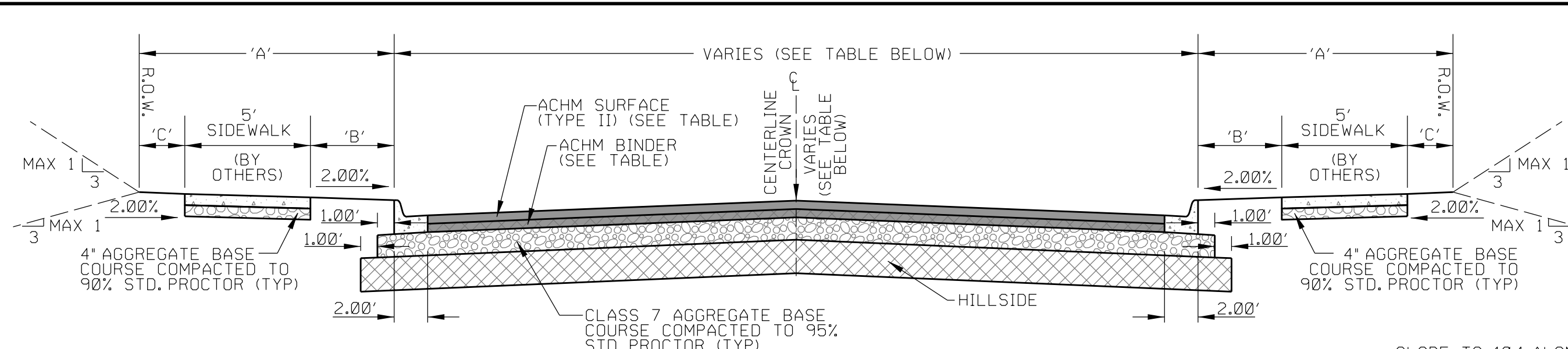
**NOTE:**  
ROCK DAMS ARE TO BE INSTALLED BEFORE ANY CLEARING OR EXCAVATION BEGINS. ROCK DAMS SHALL BE MOVED DOWNSTREAM ONTO COMPLETED CONCRETE DITCH LINING AS WORK PROGRESSES. ROCK DAMS SHALL NOT BE REMOVED FROM CHANNEL UNTIL SIDE SLOPES HAVE 80% VEGETATIVE COVER

NO.	REVISIONS	BY	DATE


**CIVIL ENGINEERING, INC.**  
 P.O. Box 12, 701 S Mt Olive, Siloam Springs, Arkansas 72761  
 (479)524-9556 Phone or (479)524-4747 Fax  
 E-MAIL: cmail@civilengpro.com

**ACTION NO. 2014-00284-1**  
**City of Siloam Springs**  
**DRAINAGE IMPROVEMENT**  
 Sec 1, T.17 N., R. 34 W.  
 September 2016 Sheet 7 of 9

FILE: B31E:revisionControl.dgn  
 REF: FILE: 023  
 VIEW: 2/24/2014 3:00:55 PM  
 DATE:



ROADWAY TYPICAL SECTION  
N.T.S.

STREET TYPE	ROW WIDTH	BOC TO CURB	CROWN WIDTH	HMAC BINDER DEPTH	BASE DEPTH	'A'	'B'	'C'
LOCAL	50'	30'	5'	2"	0'	6'	10'	4'
MINOR COMMERCIAL	50'	30'	5'	2"	3"	6'	9'	3'
COLLECTOR	60'	38'	6'	3"	3"	6'	11'	5'

ROADWAY SECTION TABLE

STREET TYPE	'B'	'L'	'X'	'Y'
LOCAL	4'	10.59'	4.10'	3.44'
MINOR COMMERCIAL	3'	14.52'	4.58'	7.25'
COLLECTOR	5'	7.10'	13.79'	0.0'

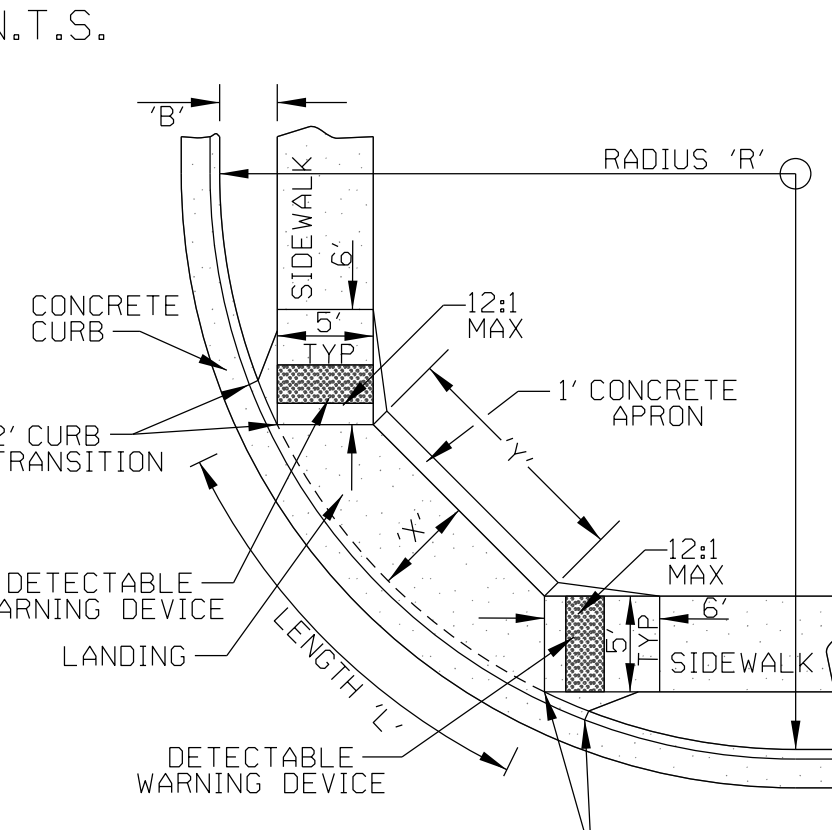
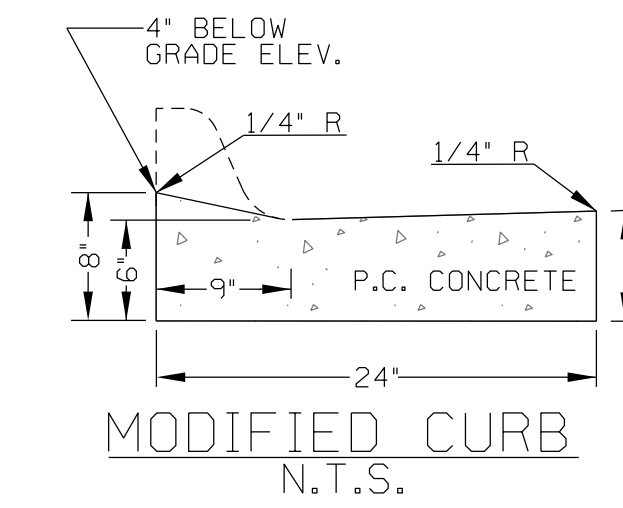
25' RADIUS DIMENSIONS

STREET TYPE	'B'	'L'	'X'	'Y'
LOCAL	4'	15.79'	4.57'	8.53'
MINOR COMMERCIAL	3'	20.06'	5.20'	12.62'
COLLECTOR	5'	11.98'	14.13'	4.80'

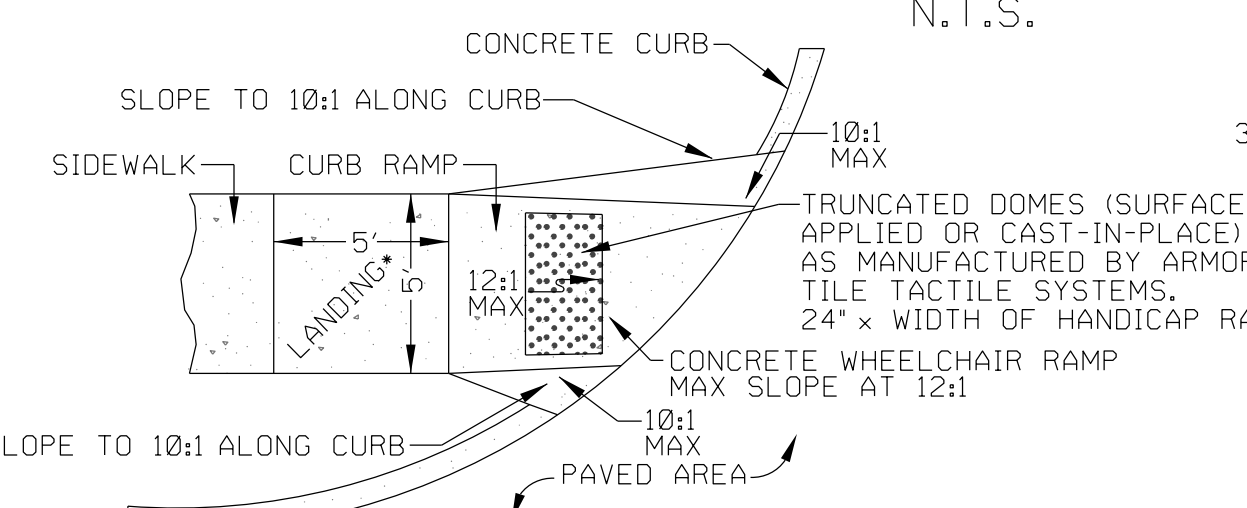
30' RADIUS DIMENSIONS

STREET TYPE	'B'	'L'	'X'	'Y'
LOCAL	4'	26.75'	5.75'	19.18'
MINOR COMMERCIAL	3'	31.65'	6.63'	23.76'
COLLECTOR	5'	22.40'	15.09'	15.04'

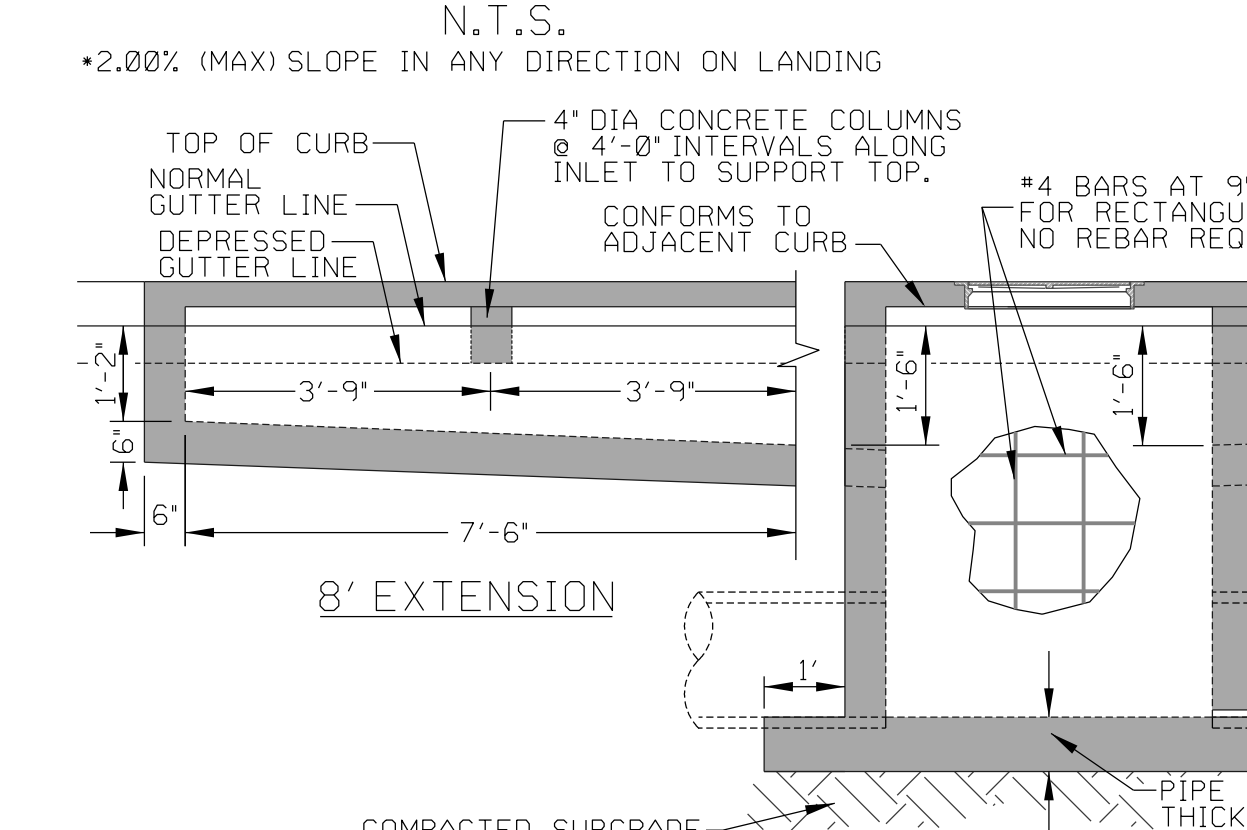
40' RADIUS DIMENSIONS



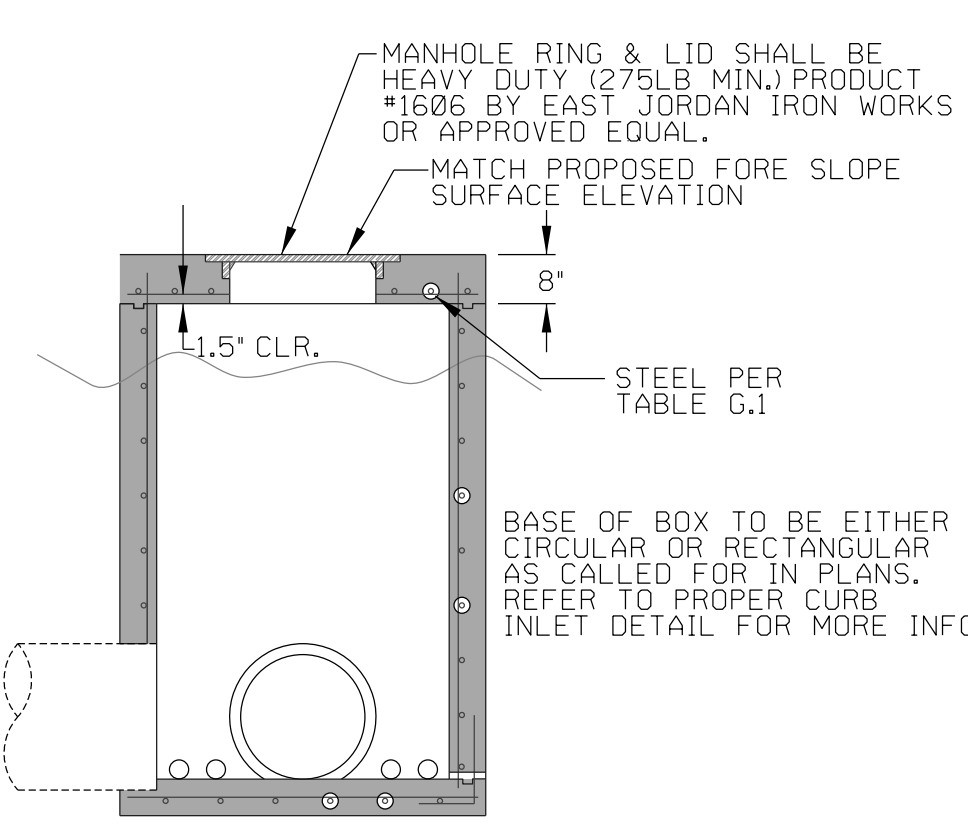
HANDICAP RAMP AT CORNER DETAIL  
N.T.S.



HANDICAP RAMP DETAIL  
N.T.S.



SECTION - CIRCULAR AND RECTANGULAR CURB INLET  
N.T.S.

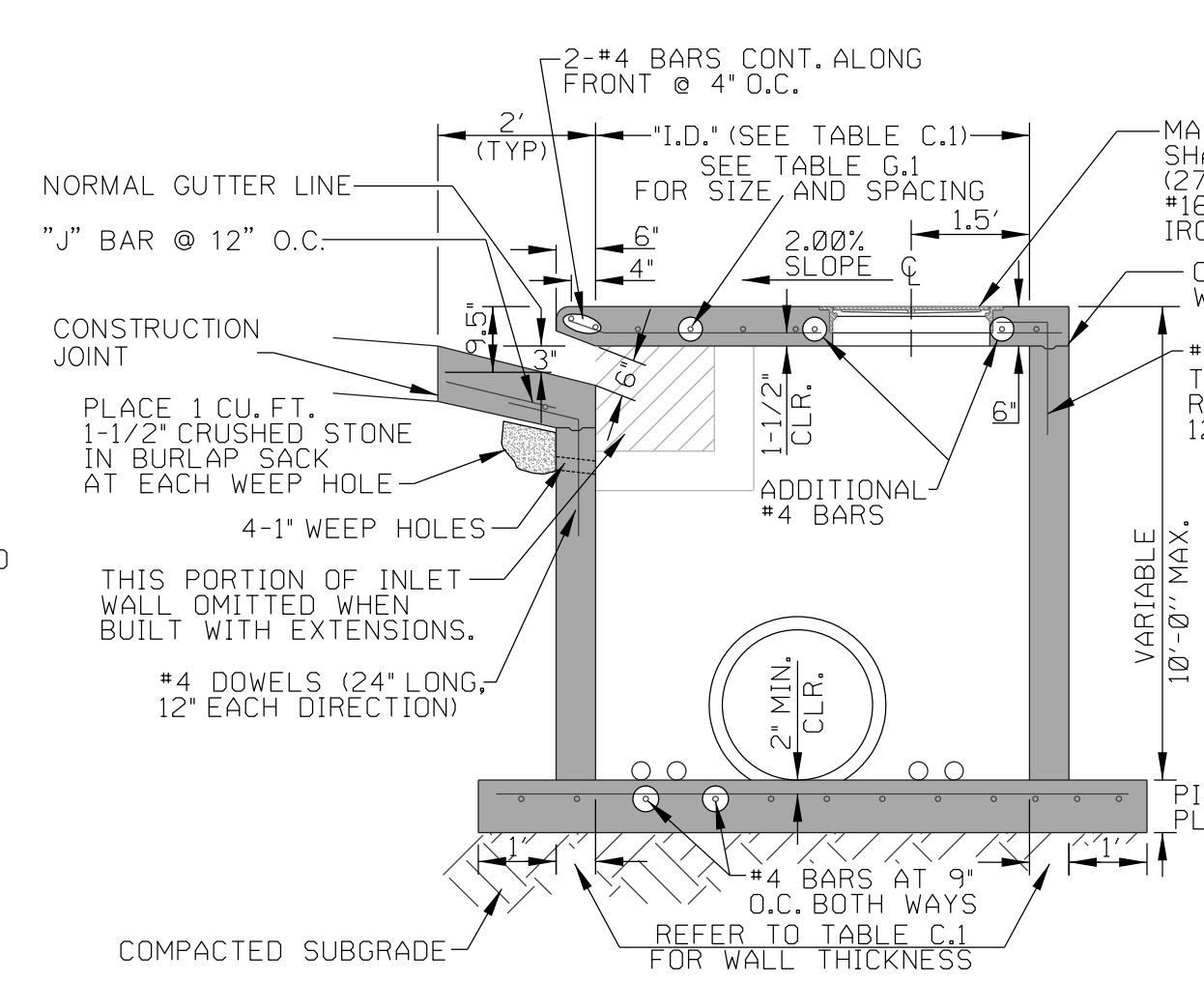


TYPICAL JUNCTION BOX  
N.T.S.

TABLE C.1  
CIRCULAR CURB INLET DIA. & WALL THICKNESS TABLE

I.D. OF C.I.	DIA. OF OUTLET PIPE	MIN. WALL THICKNESS
4" I.D.	12" - 27"	6"
5" I.D.	30" - 42"	8"
6" I.D.	48" - 54"	8"

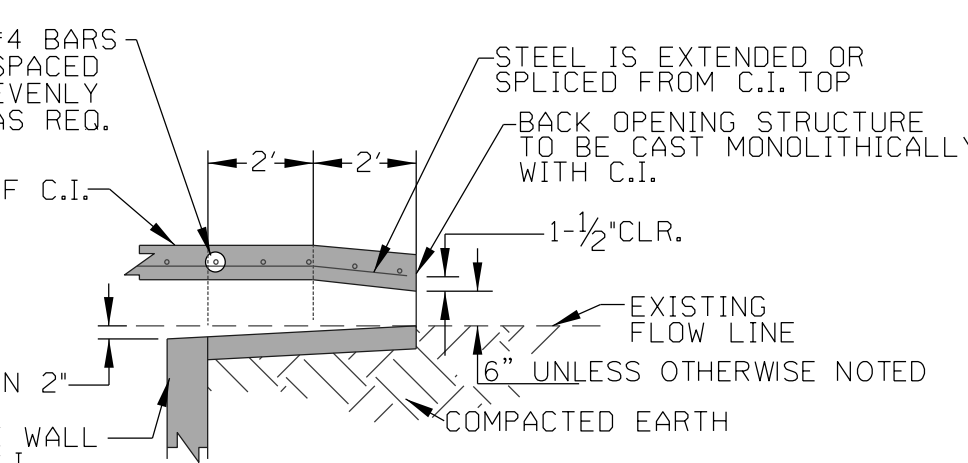
\*LIMIT DEFLECTION TO 60 DEGREES. IF GREATER USE NEXT LARGER MANHOLE DIAMETER.



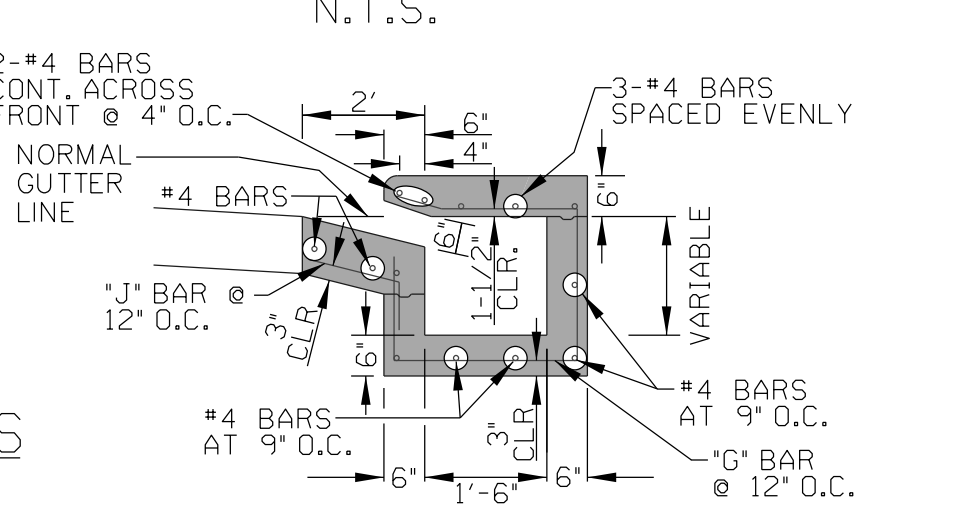
SECTION A-A  
CIRCULAR CURB INLET  
N.T.S.

TABLE G.1  
BOX TOP REINFORCING FOR CIRCULAR & RECTANGULAR INLETS

WIDTH OF CURB INLET	TOP OF CONCRETE SLAB REINFORCING
4'	#4'S @ 8" O.C. E.W.
5'	#4'S @ 7" O.C. E.W.
6'	#5'S @ 9" O.C. E.W.

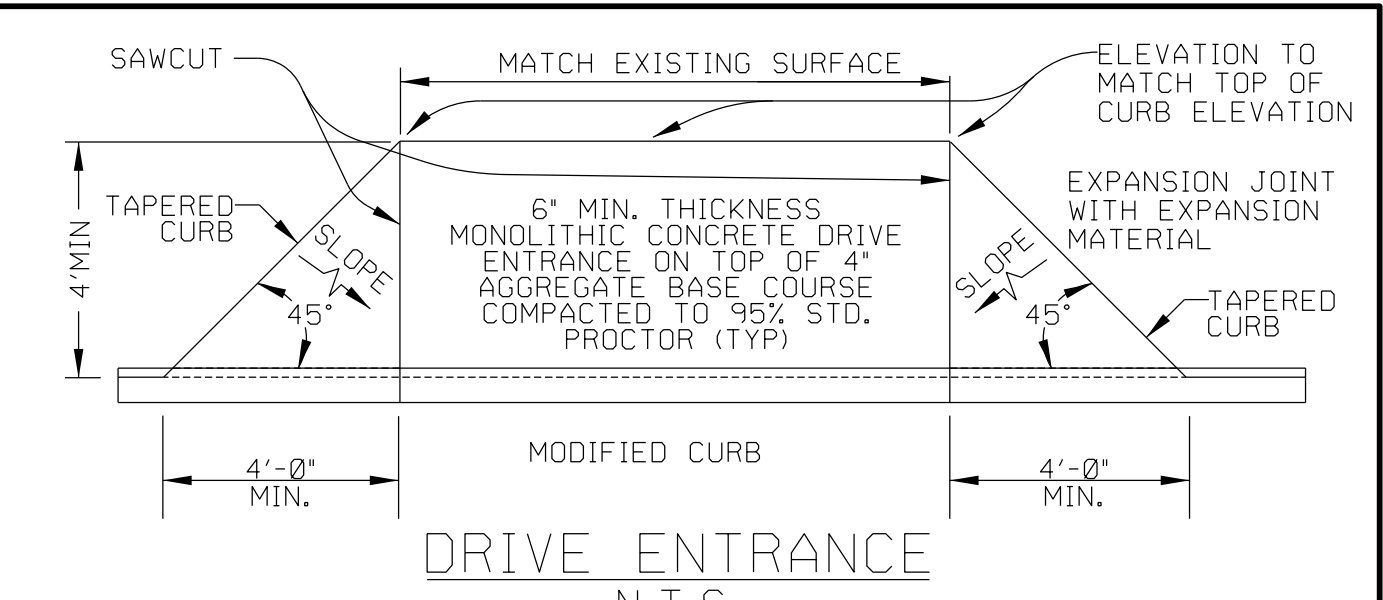


CIRCULAR & RECTANGULAR CURB INLET  
BACK OPENING  
N.T.S.

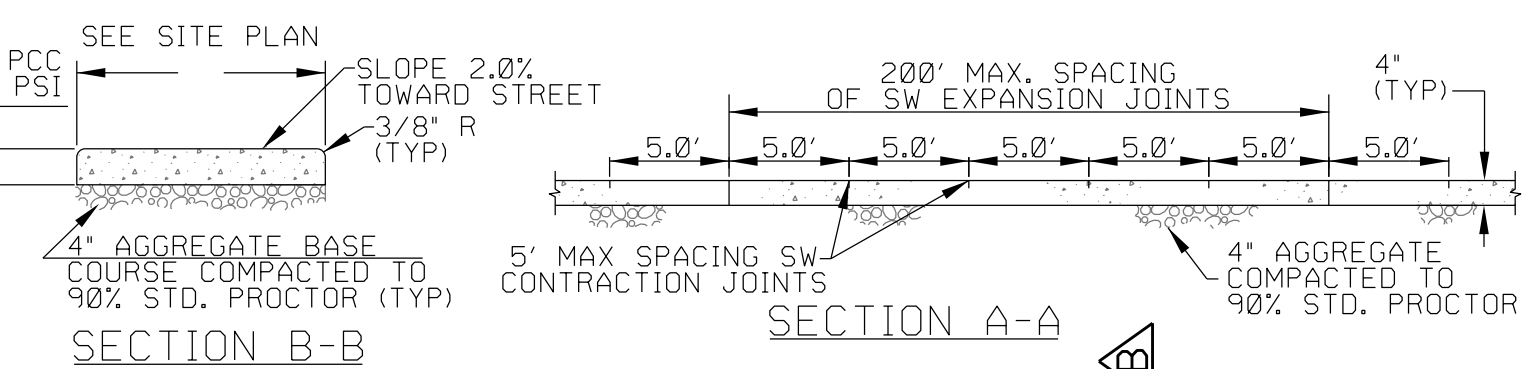


SECTION B-B  
CIRCULAR & RECTANGULAR CURB INLET  
N.T.S.

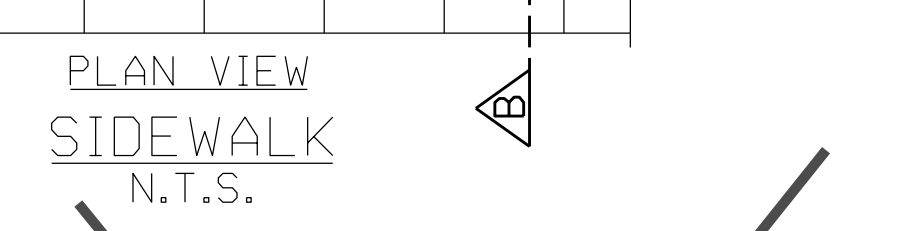
- SIDEWALK AND CURB NOTES:
1. CONCRETE USED FOR CURB AND GUTTERS SHALL HAVE MIN. 28 DAY STRENGTH OF 3,500 PSI.
  2. CONTRACTION JOINTS SHALL BE EVERY 20 FEET FOR CURB AND GUTTER AND EVERY 5' FOR SIDEWALK AND FORMED BY SAWING 1/8" IN DEPTH, 1/8" - 3/8" WIDE. JOINTS SHALL BE FILLED WITH A GRAY, SELF-LEVELING POLYURETHANE SEAL.
  3. 3/4" FELT EXPANSION JOINTS SHALL BE SPACED AT 20' MAXIMUMS AND ABUTTING CONCRETE DRIVEWAY APRONS AND THE END OF ANY CURB RADIUS. EXPANSION JOINTS SHALL EXTEND FULLY THROUGH THE CURB AND GUTTER.
  4. CONTRACTION AND EXPANSION JOINTS SHALL ALIGN WITH JOINTS IN ADJACENT SIDEWALK.
  5. ALL SAWS JOINTS SHALL BE COMPLETED WITHIN 24 HOURS OF PLACING CONCRETE.



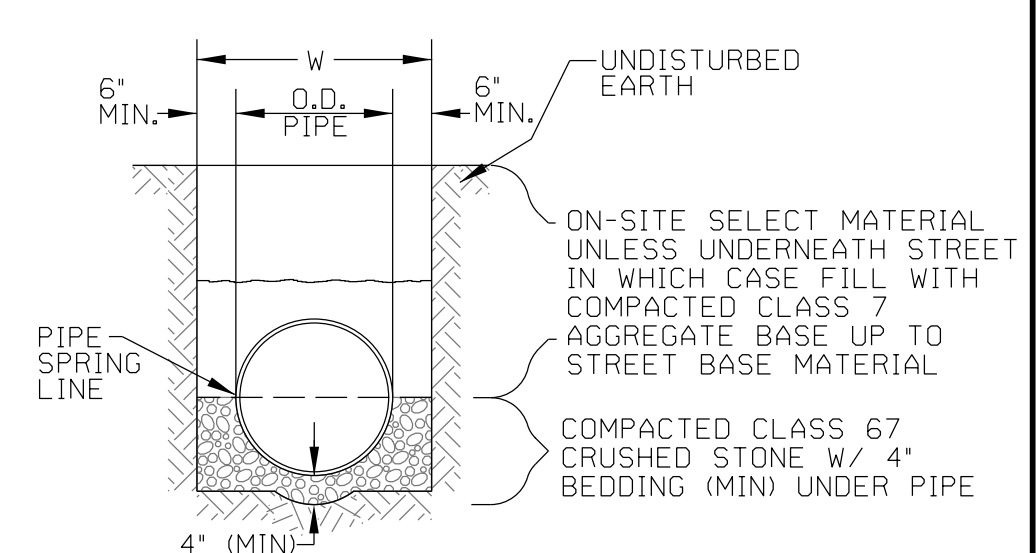
DRIVE ENTRANCE  
N.T.S.



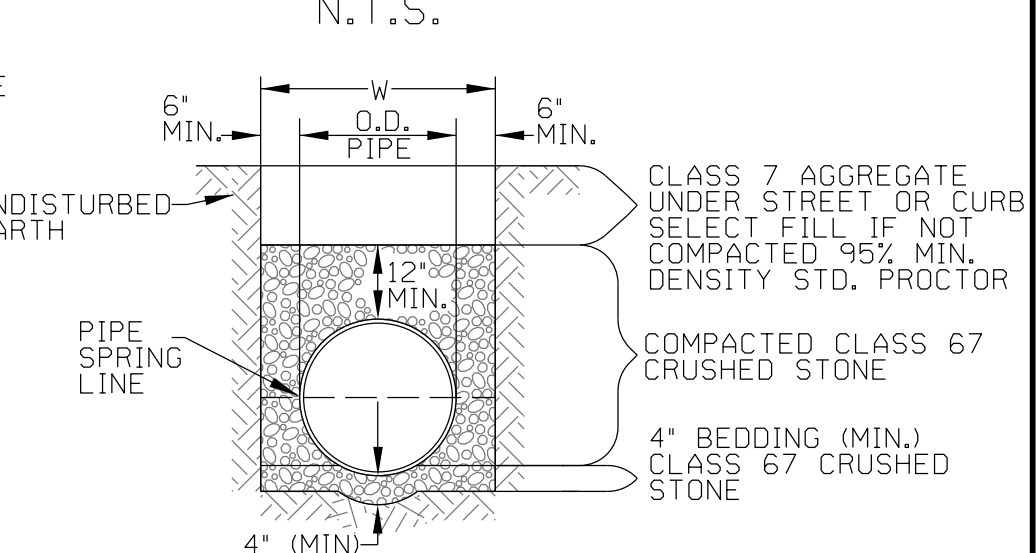
SECTION A-A  
SECTION B-B



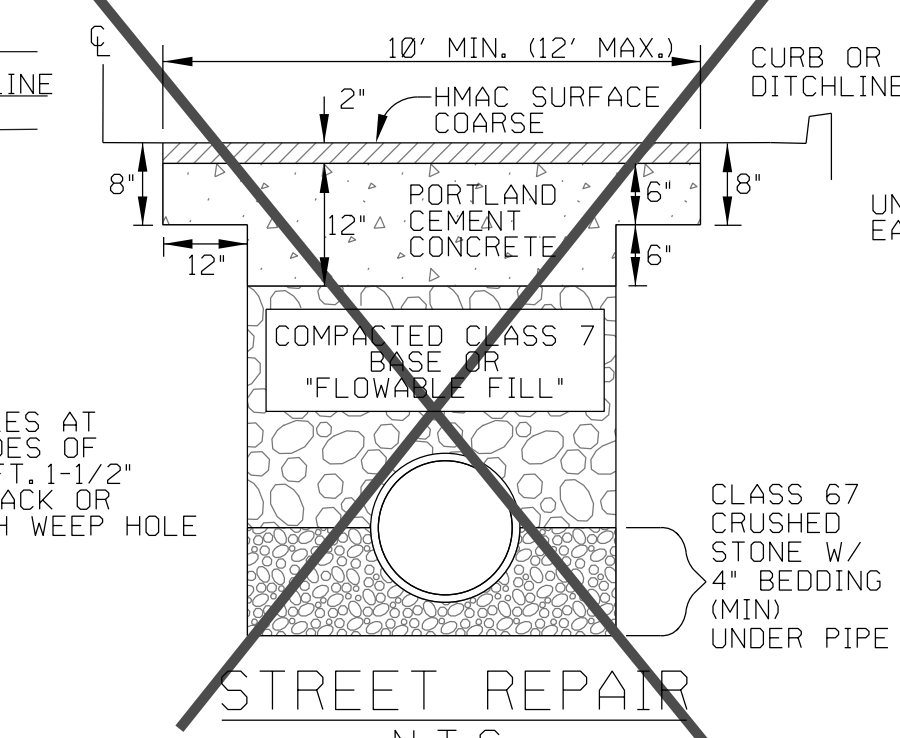
PLAN VIEW  
SIDEWALK  
N.T.S.



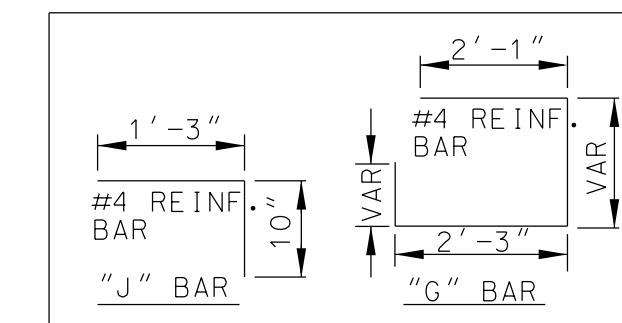
CONCRETE STORM  
SEWER TRENCH DETAIL  
N.T.S.



FLEXIBLE STORM  
SEWER TRENCH DETAIL  
N.T.S.



STREET REPAIR  
N.T.S.

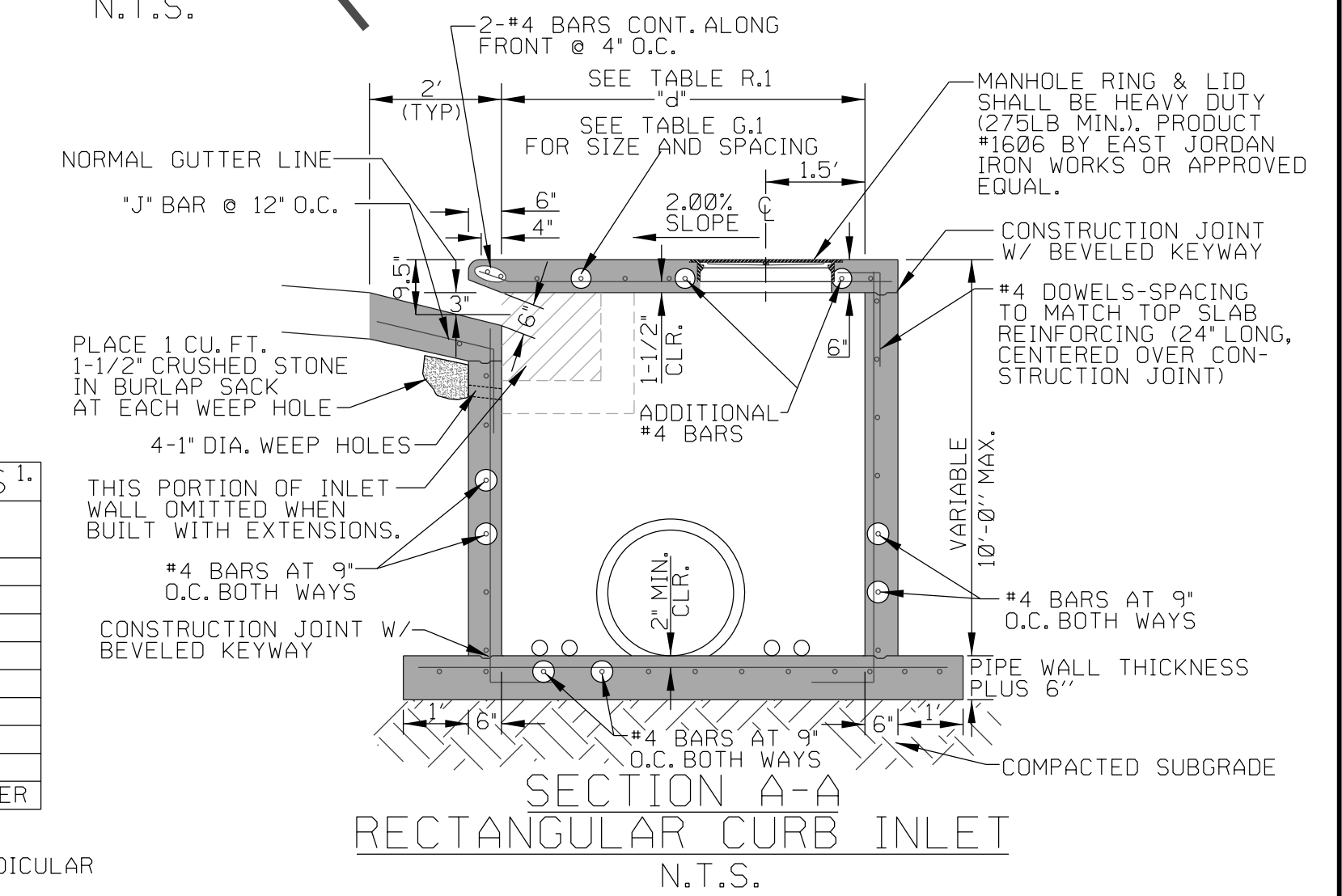


BAR DIAGRAM  
N.T.S.

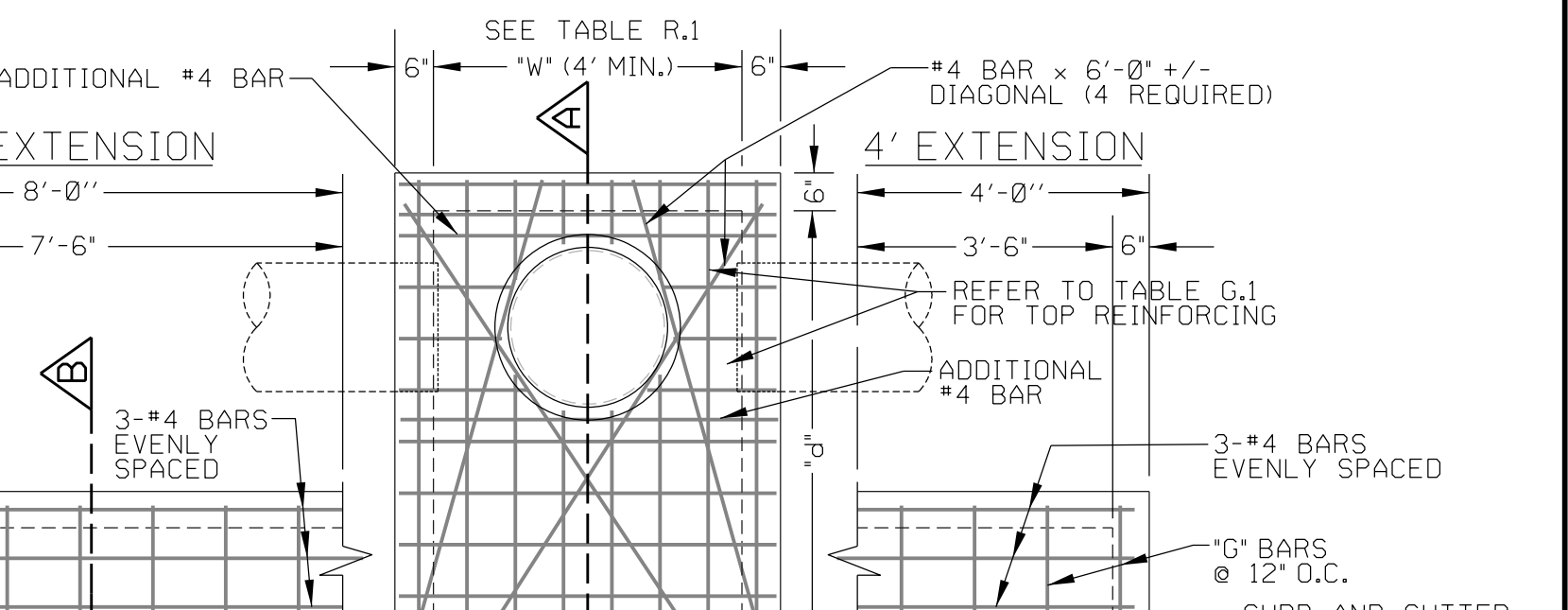
TABLE R.1  
TABLE OF 'W' & 'd' DIMENSIONS

PIPE SIZE	SKEW OF CROSS DRAIN		
	STRAIGHT	30°	45°
18"	3'-0"	3'-0"	3'-0"
24"	3'-6"	3'-0"	3'-0"
30"	4'-0"	4'-0"	5'-1"
36"	4'-8"	4'-11"	5'-11"
42"	5'-3"	5'-7"	6'-9"
48"	5'-10"	6'-3"	7'-7"
54"	6'-5"	7'-3"	8'-6"
> 60"	SEE PLAN NOTES OR CONTACT ENGINEER		

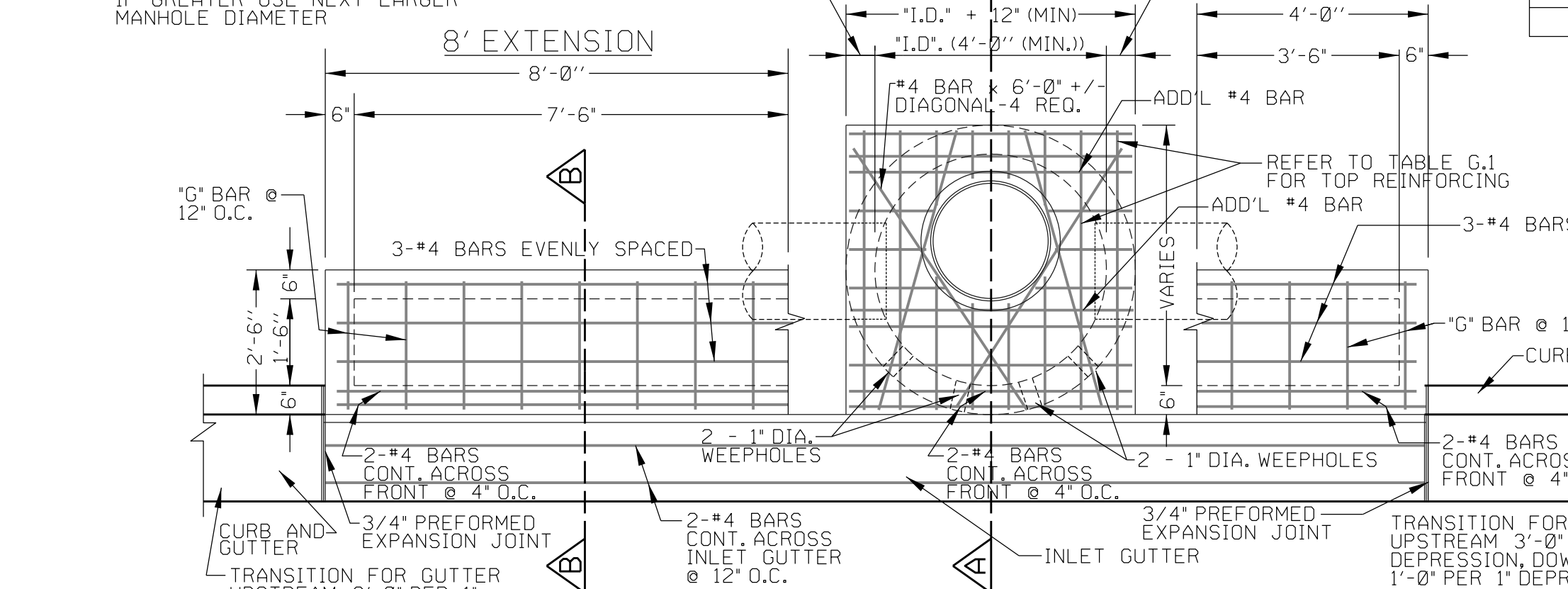
1. MIN 'W' = 4'-0" UNLESS OTHERWISE NOTED  
2. ANGLE TO BE MEASURED FROM LINE PERPENDICULAR TO LINE OF DIMENSION



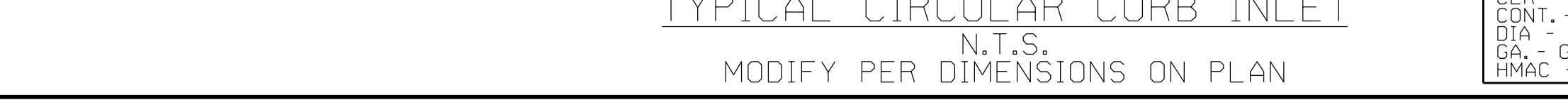
SECTION A-A  
RECTANGULAR CURB INLET  
N.T.S.



PLAN - RECTANGULAR  
CURB INLET  
N.T.S.



PLAN - CIRCULAR CURB INLET  
N.T.S.

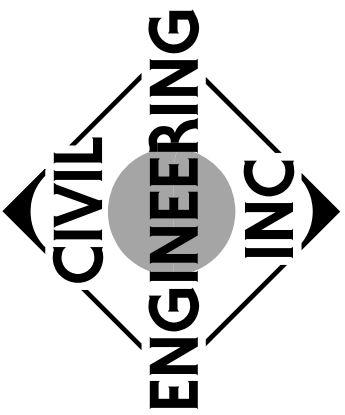


TYPICAL CIRCULAR CURB INLET  
N.T.S.

ANNOTATION LEGEND

ACHM - ASPHALT CONCRETE HOT MIX	I.D. - INSIDE DIAMETER	P.S.I. - POUNDS PER SQUARE INCH
C.I. - CENTERLINE	MAX - MAXIMUM	R - RADIUS
CLR - CLEAR	MIN - MINIMUM	REQ. - REQUIRED
CONT. - CONTINUOUS	N.T.S. - NOT TO SCALE	R.O.W. - RIGHT-OF-WAY
DIA - DIAMETER	O.C. - ON CENTER	REINF. - REINFORCED
GA. - GAUGE	O.D. - ON CENTER EACH WAY	STD - STANDARD
HMAC - HOT MIX ASPHALT CONCRETE	O.D. - OUTSIDE DIAMETER	SW - SIDEWALK
	P.C. - PORTLAND CEMENT	TYP - TYPICAL

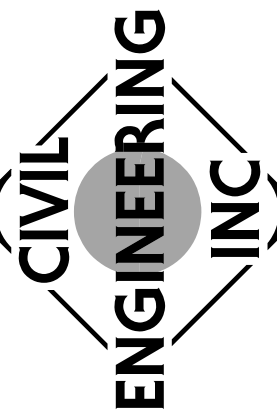
**ACTION NO. 2014-00284-1**  
**City of Siloam Springs**  
**DRAINAGE IMPROVEMENT**  
 Sec 1, T.17 N., R. 34 W.  
 September 2016



REVISION

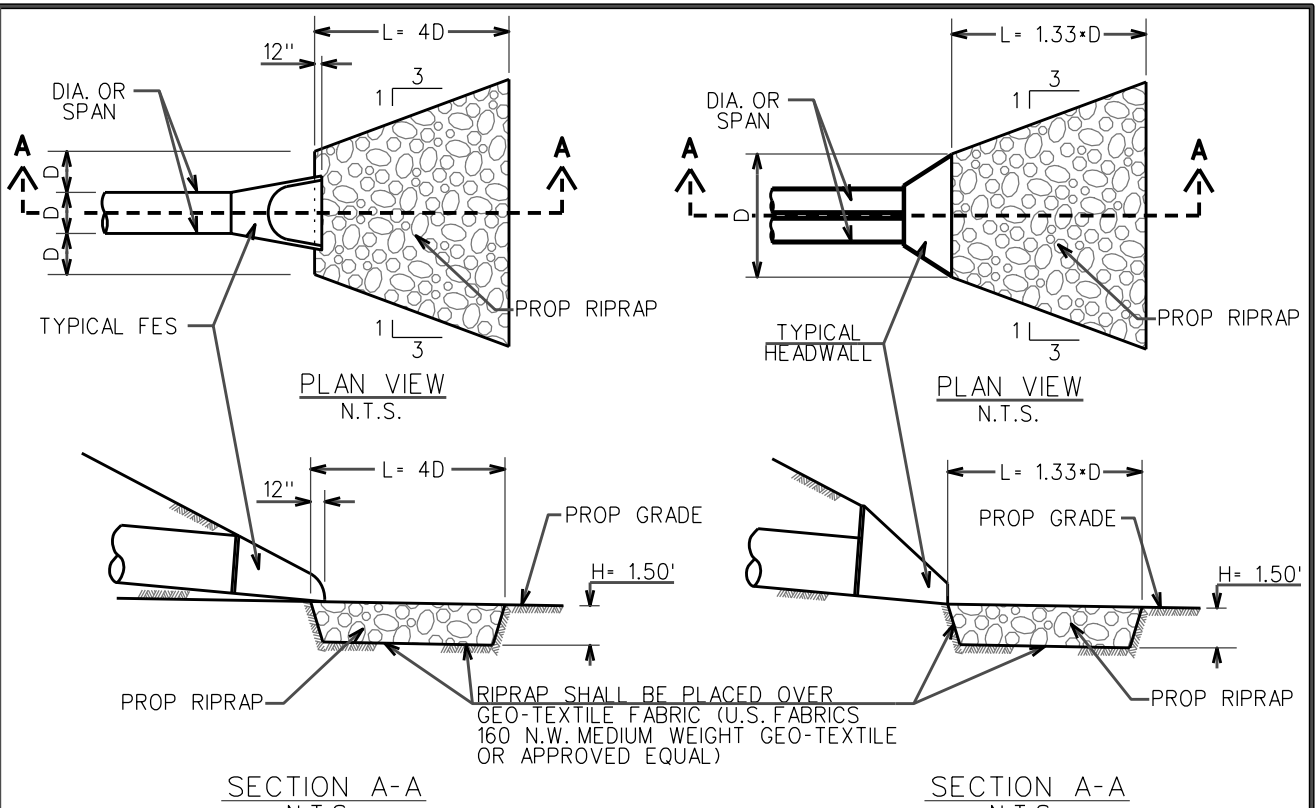
STANDARD DETAILS FOR STREET & STORM SEWER CONSTRUCTION





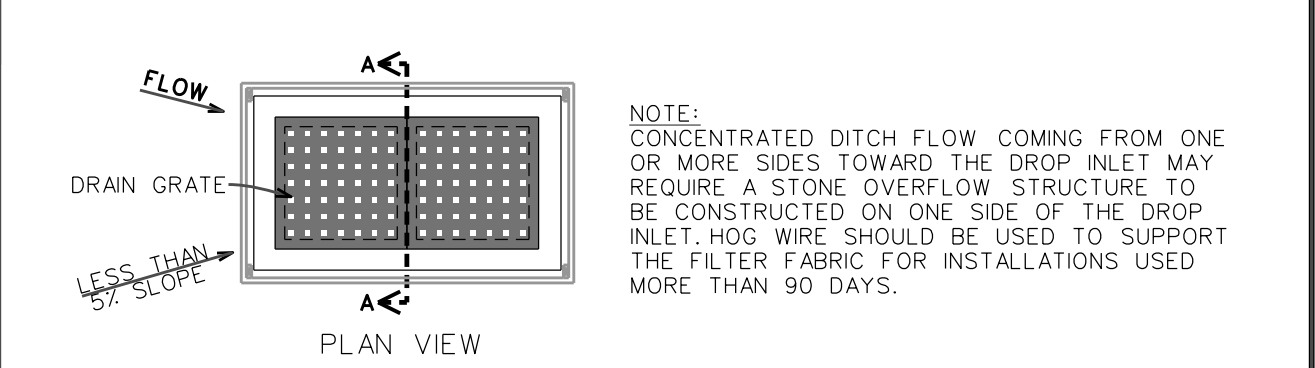
REVISION					

SEDIMENT AND EROSION CONTROL DETAILS



NOTES:  
 1. EXCAVATION FOR PLACEMENT OF RIPRAP WILL NOT BE MEASURED FOR PAYMENT.  
 2. IF CURVERT IS ARCH OR ELLIPTICAL PIPE USE EQUIVALENT SIZE CIRCULAR PIPE FOR 'D'.  
 3. THE MAXIMUM RIPRAP PIECE SIZE SHALL NOT BE GREATER THAN 18" IN ANY DIMENSION AND APPROX. 50% OF THE MATERIAL SHALL CONSIST OF PIECES WEIGHING 35 POUNDS OR MORE.

ROCK RIP-RAP DETAIL FOR TYPICAL FES AND HEADWALL  
 N.T.S.



NOTE:  
 CONCENTRATED DITCH FLOW COMING FROM ONE OR MORE SIDES TOWARD THE DROP INLET MAY REQUIRE A STONE OVERFLOW STRUCTURE TO BE CONSTRUCTED ON ONE SIDE OF THE DROP INLET. HOG WIRE SHOULD BE USED TO SUPPORT THE FILTER FABRIC FOR INSTALLATIONS USED MORE THAN 90 DAYS.

ATTACH FILTER FABRIC SECURELY TO 2X4 WOOD FRAME OVERLAPPING FABRIC TO NEXT STAKE

TOP FRAME NECESSARY FOR STABILITY

2X4 WOOD FRAME 4 SIDES OF DROP INLET

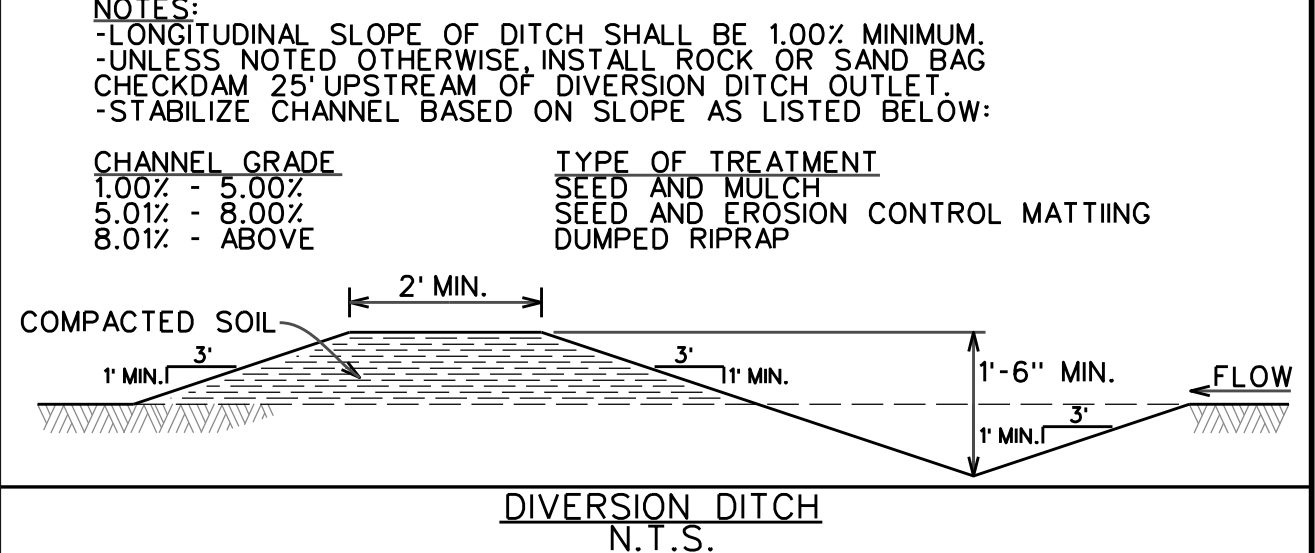
PONDING HEIGHT

FABRIC ANCHORED IN 6"X6" TRENCH BACK FILLED WITH COMPACTED EARTH.

SECTION A-A  
 DROP INLET PROTECTION  
 N.T.S.

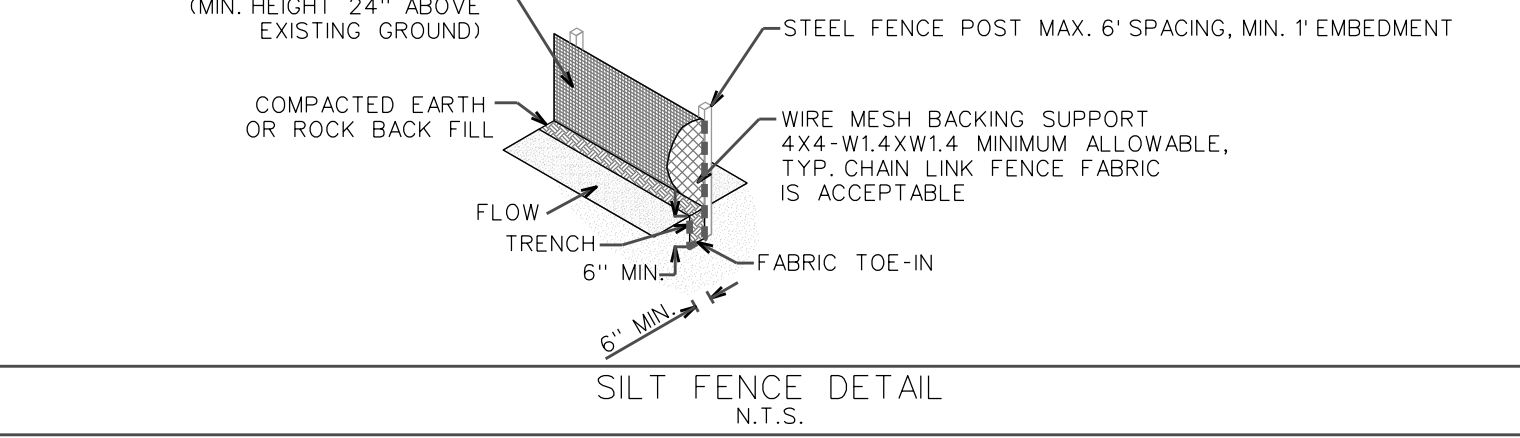
NOTES:  
 -LONGITUDINAL SLOPE OF DITCH SHALL BE 1.00% MINIMUM.  
 -UNLESS NOTED OTHERWISE, INSTALL ROCK OR SAND BAG CHECKDAM 25' UPSTREAM OF DIVERSION DITCH CHECKDAM.  
 -STABILIZE CHANNEL BASED ON SLOPE AS LISTED BELOW:

CHANNEL GRADE	TYPE OF TREATMENT
1.00% - 5.00%	SEED AND MULCH
5.01% - 8.00%	SEED AND EROSION CONTROL MATTING
8.01% - ABOVE	DUMPED RIPRAP



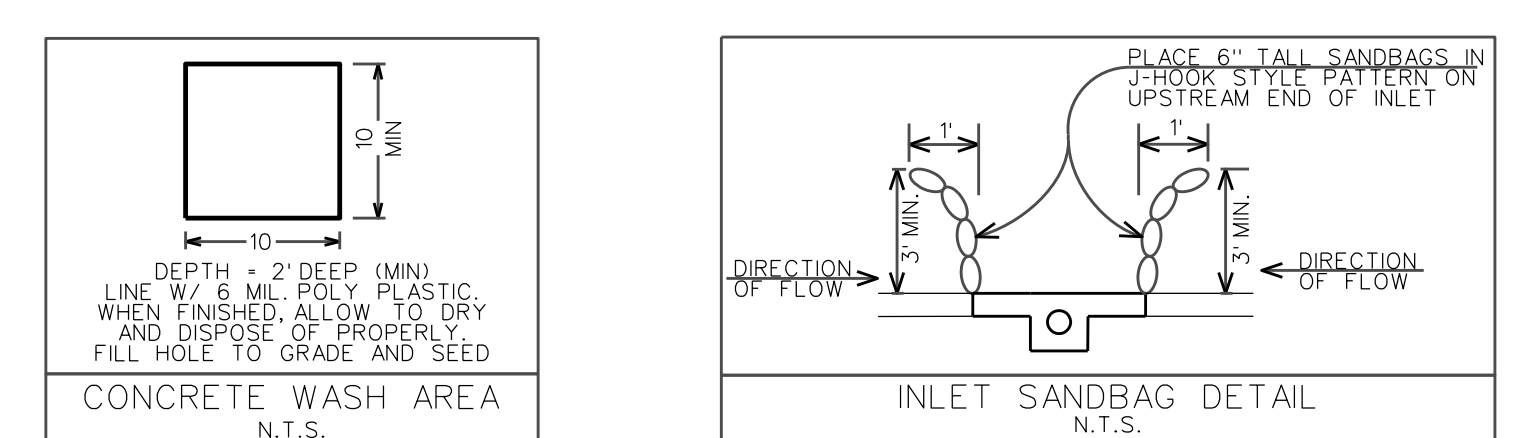
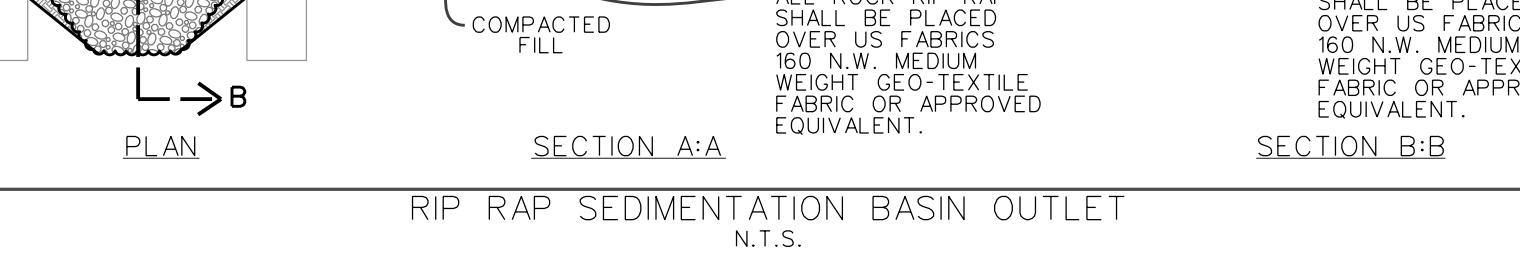
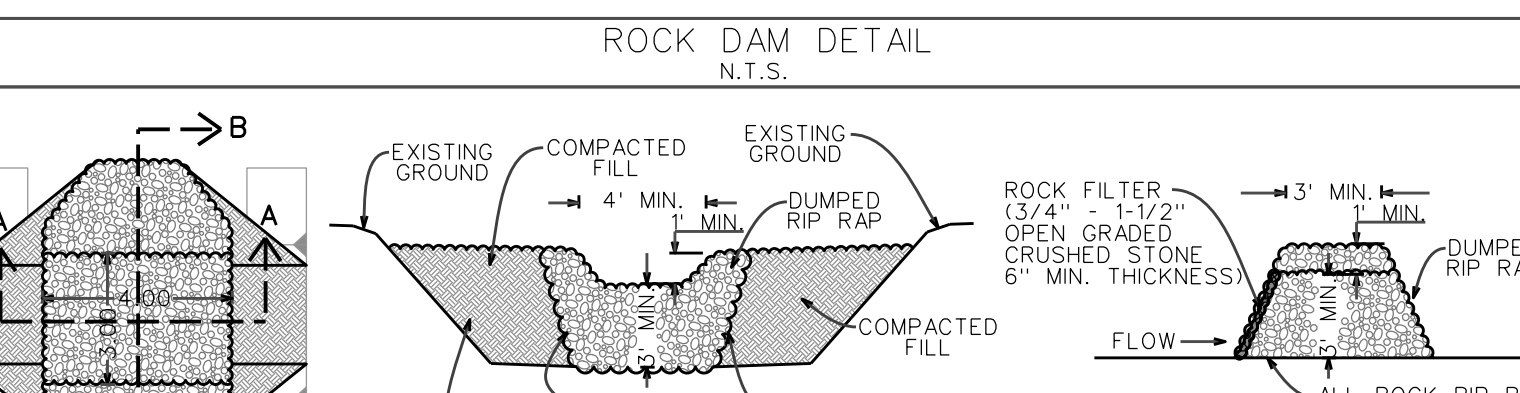
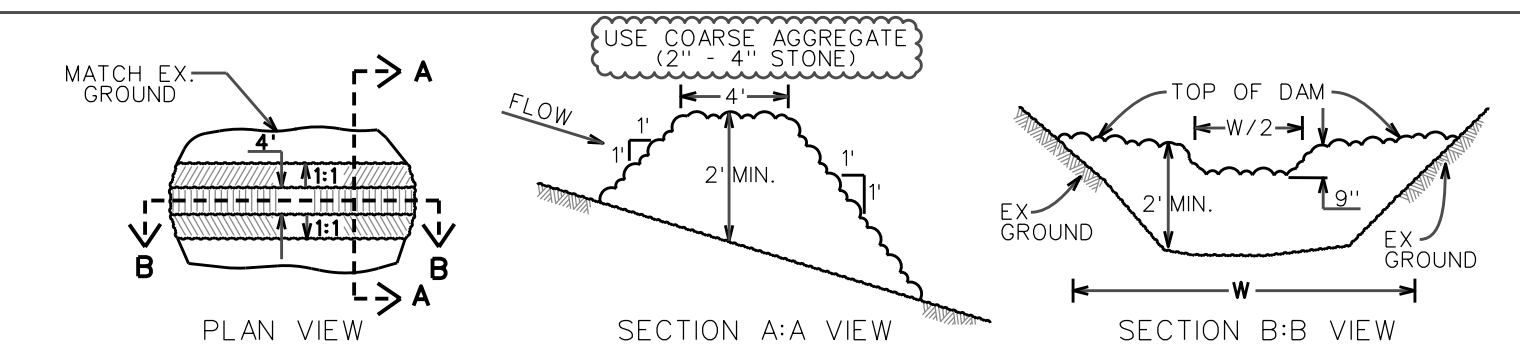
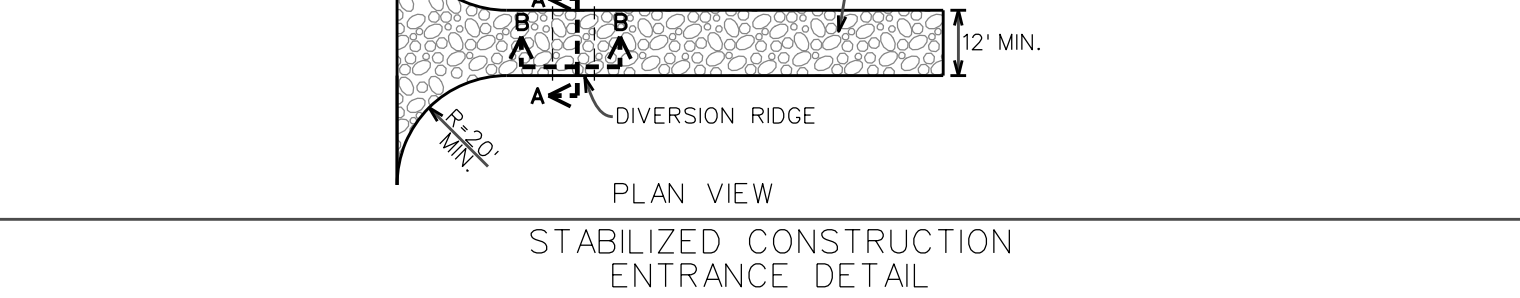
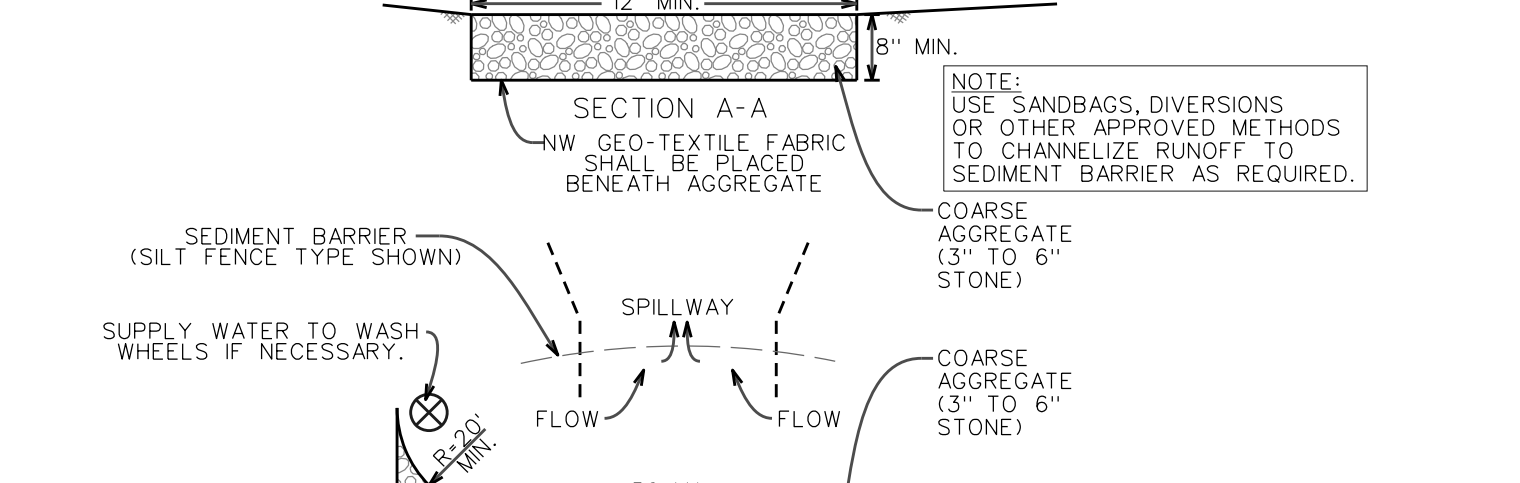
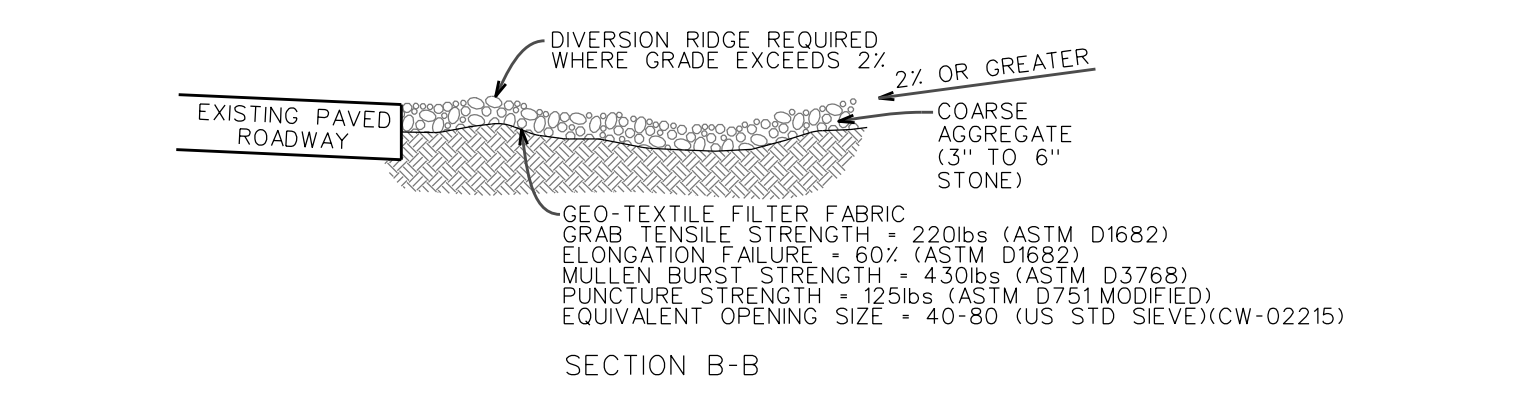
**SILT FENCE GENERAL NOTES:**

- STEEL POST WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
- THE TOE OF THE SILT FENCE SHALL BE TRENCHED WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW, WHERE FENCE CANNOT BE TRENCHED (E.G. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON THE UP-HILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
- THE TRENCH MUST BE A MINIMUM OF SIX INCHES DEEP AND SIX INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACK FILLED WITH COMPACTED MATERIAL.
- SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS MEET.
- INSPECTION SHALL BE MADE EVERY WEEK AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
- INSTALL SILT FENCE DOWNSTREAM FROM ANY AREAS WHERE FILL IS TO BE PLACED.
- ALL SILT FENCE IS TO BE PLACED PARALLEL TO GROUND CONTOURS SO THAT THE FENCE DOES NOT CHANNELIZE THE WATER.
- SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS, TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0° TO 120°.



**STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:**

- STONE SHALL BE 3 TO 6 INCH DIAMETER CRUSHED ROCK OR ACCEPTABLE CRUSHED PORTLAND CEMENT CONCRETE.
- LENGTH SHALL BE SHOWN ON PLANS WITH A MINIMUM LENGTH OF 30 FEET FOR LOTS WHICH ARE LESS THAN 150 FEET FROM EDGE OF PAVEMENT. THE MINIMUM DEPTH IN ALL OTHER CASES SHALL BE 50 FEET.
- THE THICKNESS SHALL NOT BE LESS THAN 8 INCHES.
- THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
- WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
- THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.



**EROSION CONTROL NOTES**

- CLEARING AND GRUBBING SHALL NOT BE INITIATED MORE THAN 20 CALENDAR DAYS PRIOR TO GRADING OR EARTH MOVING ACTIVITIES UNLESS THE AREA IS TEMPORARILY SEEDED AND MULCHED.
- ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER AS SOON AS PRACTICABLE.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED CONCURRENT WITH CLEARING OPERATIONS, AND SHALL BE FUNCTIONAL PRIOR TO EARTH MOVING OPERATIONS.
- PROTECTION OF EXISTING STRUCTURES IS TO BE PERFORMED ON A REGULAR BASIS AND SEDIMENT SHALL BE REMOVED FROM SEDIMENT CONTROL STRUCTURES WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. DURING SEDIMENT REMOVAL, THE CONTRACTOR SHALL TAKE CARE TO ENSURE THAT STRUCTURAL COMPONENTS OF EROSION CONTROL STRUCTURES ARE NOT DAMAGED AND THIS MADE INEFFECTIVE. IF DAMAGE DOES OCCUR, THE CONTRACTOR SHALL REPAIR THE STRUCTURES AT THE CONTRACTOR'S OWN EXPENSE.
- SEDIMENT SHALL BE CONTAINED WITHIN THE PROJECT LIMITS AND DOES NOT MIGRATE INTO WATERS OF THE STATE / U.S.
- THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT THE OFF-SITE MIGRATION OR DEPOSIT OF SEDIMENT ON ROADWAYS USED BY THE GENERAL PUBLIC.
- SILT FENCE MUST BE PREVENTED FROM ENTERING WATERS OF THE STATE / U.S. EROSION AND SEDIMENTATION CONTROL MEASURES TO PROTECT WATER QUALITY MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. SILT FENCE MUST BE INSTALLED ALONG STREAM BANKS OF ALL FILLS AND CUTS, ON THE DOWNHILL SIDE OF STOCKPILED SOIL, AND ALONG STREAM BANKS IN CLEARED AREAS TO PREVENT SEDIMENT MIGRATION INTO STREAMS. THEY MUST BE INSTALLED ON THE CONTOUR, ENTHENCED AND STAKED, AND EXTEND THE WIDTH OF THE AREA TO BE CLEARED.
- SLURRY WATER PUMPED FROM WORK AREAS AND EXCAVATIONS MUST BE HELD IN SETTLING BASINS OR TREATED BY FILTRATION PRIOR TO ITS DISCHARGE INTO SURFACE WATERS. WATER MUST BE HELD IN SETTLING BASINS UNTIL AT LEAST AS CLEAR AS THE RECEIVING WATERS. SETTLING BASINS SHALL NOT BE LOCATED CLOSER THAN 20 FEET FROM THE TOP BANK OF A STREAM. SETTLING BASINS AND TRAPS SHALL BE PROPERLY DESIGNED AND SIZED ACCORDING TO THE DISCHARGE RATE OF THE SLURRY OPERATION. THE EFFLUENT FROM THE SETTLING BASIN OR TRAP SHALL BE DISCHARGED THROUGH A PIPE OR A WELL-VEGETATED OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION AND SEDIMENTATION.
- CHECK DAMS SHALL BE UTILIZED WHERE RUNOFF IS CONCENTRATED. CLEAN ROCK, SANDBAGS, OR CHECK DAMS SHALL BE PROPERLY CONSTRUCTED TO DETAIN RUNOFF AND TRAP SEDIMENT. CLEAN ROCK IS ROCK OF VARIOUS TYPE AND SIZE, SUFFICIENT TO PREVENT OVERFLOW, WHICH CONTAINS NO FINES, SOILS, OR OTHER WASTES OR CONTAMINANTS.
- PERMANENT EROSION CONTROL MEASURES SHALL BE INITIATED WITHIN 15 CALENDAR DAYS AFTER FINAL GRADING.
- THE CONTRACTOR SHALL INSTALL A RAIN GAUGE ON-SITE, AND MAINTAIN IT IN GOOD WORKING CONDITION. THE CONTRACTOR SHALL RECORD DAILY PRECIPITATION ON THE PROJECT AND PROVIDE THIS INFORMATION TO THE ENGINEER ON A MONTHLY BASIS. THE COST FOR THE RAIN GAUGE IS TO BE INCLUDED IN THE UNIT BID PRICES FOR OTHER ITEMS.
- INSPECTION OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DONE BEFORE ANTICIPATED STORM EVENTS OR SERIES OF STORM EVENTS WHICH ARE FORECAST OR WHEN MORE THAN 24 HOURS AFTER THE END OF A STORM EVENT OF 0.50 INCHES OR GREATER, AND AT LEAST ONCE PER WEEK.
- OUTFALL POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING IMPACT TO SURROUNDING WATERS. LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE ROADWAY SEDIMENT TRACKING.
- UPON CONCLUSION OF THE INSPECTIONS, EROSION AND SEDIMENT CONTROL MEASURES FOUND TO INEFFECTIVE SHALL BE REPAIRED, REPLACED, OR MODIFIED BEFORE THE NEXT RAIN EVENT, IF POSSIBLE, BUT IN NO CASE MORE THAN SEVEN DAYS AFTER THE CONDITION IS IDENTIFIED.
- IF THE CONTRACTOR OBTAINS A STORM WATER POLLUTION PREVENTION PLAN ON-SITE (OR AT A NEARBY OFFICE) AND SHALL PLACE COPIES OF ANY PROJECT-RELATED PERMITS ON THE PROJECT BULLETIN BOARD.
- THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO ENSURE THAT PETROLEUM PRODUCTS OR OTHER CHEMICAL POLLUTANTS ARE PREVENTED FROM ENTERING WATERS OF THE STATE / U.S. ALL EQUIPMENT, FUEL TANKS, SERVICING, AND STAGING AREAS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS, RULES, REGULATIONS, AND ORDINANCES INCLUDING THOSE OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). APPROPRIATE CONTAMINANT MEASURES FOR THESE AREAS SHALL BE UTILIZED. ALL SPILLS MUST BE REPORTED TO THE APPROPRIATE AGENCY, AND MEASURE SHALL BE TAKEN IMMEDIATELY TO PREVENT THE POLLUTION OF WATERS OF THE STATE / U.S. INCLUDING GROUNDWATER, SHOULD A SPILL OCCUR.
- CONSTRUCTION ENTRANCE MATS SHALL BE LOCATED IN NON-WETLAND AREAS AND ABOVE THE 100-YEAR FEDERAL EMERGENCY MANAGEMENT AGENCY FLOODPLAIN. BORROW AND WASTE DISPOSAL AREAS SHALL NOT AFFECT ANY WATERS OF THE STATE / U.S. UNLESS THESE AREAS ARE SPECIFICALLY COVERED BY AN ARP, 404, OR NEPDES PERMIT.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND OBTAIN ANY NECESSARY ENVIRONMENTAL PERMITS OR APPROVALS WITHIN THE PROJECT LIMITS. LOCAL AGENCIES REGARDING THE OPERATION OF ANY PROJECT-DEDICATED ASPHALT AND/OR CONCRETE PLANTS.
- WETLAND AREAS SHALL NOT BE USED AS EQUIPMENT STORAGE, STAGING, OR TRANSPORTATION AREAS, UNLESS PROVIDED FOR IN THE PLANS.
- ANY DISAGREEMENT BETWEEN THE PROJECT PLANS, THE PROJECT AS CONSTRUCTED AND THE PERMIT OR PERMITS ISSUED FOR THE PROJECT, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE AEOJ SHALL DECIDE WHICH HAS PRECEDENCE AND WHETHER PERMIT OR PLANS REVISIONS ARE NEEDED. IN GENERAL, PERMIT CONDITIONS WILL PREVAIL.

**POLLUTION CONTROL GENERAL NOTES:**

- THIS PLAN HAS BEEN PREPARED TO PROVIDE MEANS TO PREVENT OR MINIMIZE POLLUTION OF STORM WATER
- THIS PROJECT CONSIST OF THE DEVELOPMENT OF (1) LOT ON A 10.00 ACRE TRACT FOR A COMMERCIAL (CONTINGENT CARE FACILITY) USE.
- THE CONSTRUCTION ACTIVITY INCLUDED IN THIS PLAN WILL INCLUDE
  - A. CLEARING AND GRUBBING
  - B. STOCK PILING
  - C. ROUGH GRADING
  - D. UTILITY INSTALLATION/EXCAVATION OF TRENCHES
  - E. FINAL OR FINISH GRADING
  - F. PAVEMENT INSTALLATION
  - G. BUILDING CONSTRUCTION
  - H. PREPARATION OF SEEDING OR PLANTING
- BEST MANAGEMENT PRACTICES (STRUCTURAL, PRACTICES) SHOWN ON THIS PROJECT COULD INCLUDE SILT FENCING, CONSTRUCTION ENTRANCE INLET PROTECTION, OUTLET PROTECTION, SUBSURFACE DRAINS, CHECK DAMS, DRAINAGE SWALES, SEDIMENT TRAPS, EARTH DIKE, PIPE SLOPE DRAINS, EROSION CONTROL MATTING, DETENTION/RETENTION PONDS AND SEDIMENT TRAPS.
- THE TOTAL ESTIMATED SITE AREA IS 10.0 ACRES
- THE TOTAL ESTIMATED SITE AREA TO BE DISTURBED IS 10 ACRES
- THE ESTIMATED RUNOFF COEFFICIENT PRIOR TO DEVELOPMENT IS 0.30
- THE ESTIMATED RUNOFF COEFFICIENT IS 0.91
- THE SLOPES EXPECTED ON THE SITE UPON COMPLETION OF FINAL GRADING WILL RANGE BETWEEN 1% AND 35%
- THE STORM WATER EXITING THE SITE IS COLLECTED IN DETENTION BASIN.
- THE NAME OF THE RECEIVING WATER BODY IS SAGER CREEK, LOCATED APPROXIMATELY FROM THE SUBJECT PROPERTY.
- THE SOILS PRESENT AT THE SITE ARE GENERALLY SOILS.
- THE CONTRACTOR SHALL PROVIDE DOWNHILL EROSION PROTECTION AROUND THE WORK AREA PERMETER AND AT ALL INLET MOUTHS DURING CONSTRUCTION.
- THE CONTRACTOR SHALL REMOVE ALL EXCESS SOIL FROM CONSTRUCTION VEHICLES PRIOR TO EXITING THE SITE.
- ALL DISTURBED AREAS WHICH WILL NOT BE RE-DISTURBED FOR A MINIMUM OF 14 DAYS MUST BE STABILIZED BY THE CONTRACTOR TO CONTROL EROSION AND OR DUST.
- THE CONTRACTOR SHALL UNDERTAKE PROPER METHODS TO REDUCE DUST GENERATION FROM THE SITE.
- THE CONTRACTOR MUST COMPLY WITH FEDERAL, STATE AND LOCAL REGULATIONS REGARDING SEDIMENT AND EROSION CONTROL.
- THE COPY OF THE STORM WATER POLLUTION PREVENTION PLAN ALONG WITH THE E.P.A. (NPDES) PERMIT MUST BE POSTED AT THE CONSTRUCTION SITE THROUGHOUT THE CONSTRUCTION OF THE PROJECT. NO WORK IS ALLOWED BEFORE THE PERMIT HAS BEEN ISSUED.
- ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THIS PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE CITY.
- IF OFF-SITE SOIL BORROW OR SPOIL SITES ARE USED IN CONJUNCTION WITH THIS PROJECT, THE CONTRACTOR SHALL NOTIFY THE INSPECTOR AND BE RESPONSIBLE FOR EROSION CONTROL REQUIREMENTS AS PER FEDERAL, STATE AND LOCAL REQUIREMENTS.
- INSPECTIONS SHALL BE MADE WEEKLY AND AFTER 1/2" RAIN. STORM EVENTS TO INSURE THAT ALL DEVICES ARE FUNCTIONING PROPERLY. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN STONES OR MUD IS BEING TRACKED ONTO A PUBLIC ROADWAY THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASH DOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF-SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BEST MANAGEMENT PRACTICE (BMP) TO CONTROL OFF-SITE SEDIMENTATION. PERIODIC RE-GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN EFFICIENCY OF THE INSTALLATION.
- MAINTENANCE AND INSPECTIONS PROCEDURES: CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF ANY STORM EVENT OF 0.5 INCHES OR GREATER. IF REPAIR IS NECESSARY IT SHALL BE DONE AT THE EARLIEST PRACTICAL DATE BUT IN NO CASE GREATER THAN 48 HOURS.
- FINAL STABILIZATION IS DEFINED AS A UNIFORM PERENNIAL VEGETATIVE COVER AT A MINIMUM OF 70% RESTORATION OF THE NATIVE OR NATURAL PREEXISTING BACKGROUND COVER FOR THE AREA.
- SEDIMENTATION PONDS/TRAPS MUST BE CLEANED OUT WHEN SEDIMENTATION ACCUMULATES TO A POINT OF 50% FULL (BY VOLUME).

**SEQUENCE OF EROSION CONTROL BEST MANAGEMENT PRACTICES**

- INSTALL DOWN SLOPE AND SIDE SLOPE PERMETER CONTROLS PRIOR TO THE LAND DISTURBING ACTIVITIES.
- DO NOT DISTURB AN AREA UNTIL IT IS NECESSARY FOR CONSTRUCTION TO PROCEED.
- COVER AND STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE (WITHIN A MAXIMUM OF 14 DAYS).
- TIME ACTIVITIES TO LIMIT IMPACT FROM SEASONAL CLIMATE CHANGES OR WEATHER EVENTS.
- DELAY CONSTRUCTION OF INFILTRATION MEASURES UNTIL THE END OF THE CONSTRUCTION PROJECT, WHEN UPSTREAM DRAINAGE AREAS HAVE BEEN STABILIZED.
- DO NOT REMOVE TEMPORARY PERMETER CONTROLS UNTIL AFTER ALL UPSTREAM AREAS ARE FINAL STABILIZED.

**IN CASE OF SPILLS AND RELEASES (OF REPORTABLE QUANTITIES) THE FOLLOWING STEPS SHALL BE TAKEN**

- NOTIFY THE NATIONAL RESPONSE CENTER (800) 424-8802 OR (202) 426-2675 AS SOON AS YOU HAVE KNOWLEDGE OF THE SPILL.
- THE SWPPP MUST BE MODIFIED WITHIN 14 DAYS TO PROVIDE A DESCRIPTION OF THE RELEASE, THE CIRCUMSTANCES LEADING TO THE RELEASE AND THE DATE OF THE RELEASE.

**ALLOWED NON-STORM WATER DISCHARGE**

- DISCHARGES FROM FIRE FIGHTING ACTIVITIES.
- FIRE HYDRANT FLUSHINGS.
- WATER USED TO WASH VEHICLES OR CONTROL DUST.
- POTABLE WATER SOURCES (INCLUDING WATERLINE FLUSHINGS CONTAINING LESS THAN 1000 GALLONS).
- UNCONTAMINATED GROUND WATER INCLUDING WATER FROM DEWELLING, WATER FROM WATER TREATMENT PLANTS.
- FOUNDATION OR FOUNDING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS.
- SPRINGS, RIPARIAN HABITATS, WETLANDS AND UNCONTAMINATED GROUNDWATER.
- IRRIGATION WATER.
- EXTERIOR BUILDING WASH DOWN WITHOUT DETERGENTS.
- PAVEMENT WASH WATERS WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS ALL SPILL MATERIAL HAS BEEN REMOVED) AND WHERE DETERGENTS ARE NOT USED.
- AIR CONDITIONING CONDENSATE.

**SOLID WASTE MANAGEMENT**

**DESCRIPTION:**  
 LARGE VOLUMES OF SOLID WASTE ARE OFTEN GENERATED AT CONSTRUCTION SITES INCLUDING: PACKAGING, PALLETS, WOOD WASTE, CONCRETE WASTE, SOIL, ELECTRICAL WIRING, CUTTINGS, AND A VARIETY OF OTHER MATERIALS. THE SOLID WASTE MANAGEMENT PRACTICE LISTS TECHNIQUES TO MINIMIZE THE POTENTIAL OF STORM WATER CONTAMINATION FROM SOLID WASTE THROUGH APPROPRIATE STORAGE AND DISPOSAL PRACTICES.

**PRIMARY USE:**  
 THESE PRACTICES SHOULD BE A PART OF ALL CONSTRUCTION PRACTICES, BY LIMITING THE TRASH AND DEBRIS ON SITE, STORM WATER QUALITY IS IMPROVED ALONG WITH REDUCED CLEAN UP REQUIREMENTS AT THE COMPLETION OF THE PROJECT.

**APPLICATIONS:**  
 THE SOLID WASTE MANAGEMENT PRACTICE FOR CONSTRUCTION SITES IS BASED ON PROPER STORAGE AND DISPOSAL PRACTICES BY CONSTRUCTION WORKERS AND SUPERVISORS. KEY ELEMENTS OF THE PROGRAM ARE EDUCATION AND MODIFICATION OF PROPER DISPOSAL HABITS. COOPERATION AND VIGILANCE IS REQUIRED ON THE PART OF SUPERVISORS AND WORKERS TO ENSURE THAT THE RECOMMENDATIONS AND PROCEDURES ARE FOLLOWED. FOLLOWING ARE LISTS DESCRIBING THE TARGETED MATERIALS AND RECOMMENDED PROCEDURES:

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| -TARGETED SOLID WASTE MATERIALS       | -CONCRETE, BRICK, AND MORTAR WASTE  |
| -PAPER AND CARDBOARD CONTAINERS       | -DEMOLITION WASTE                   |
| -PLASTIC PACKAGING                    | -WOOD WASTE                         |
| -STYROFOAM PACKING AND FORMS          | -MISCELLANEOUS CUTTINGS AND WASTE   |
| -INSULATION MATERIALS (NON HAZARDOUS) | -SHEATHING CUTTINGS AND WASTE       |
| -WOOD PALLETS AND CUTTINGS            | -GYPSUM BOARD CUTTINGS AND WASTE    |
| -SHINGLE CUTTING AND WASTE            | -STEEL CUTTINGS, NAILS RUST RESIDUE |
| -PIPE AND ELECTRICAL CUTTINGS         | -ROOFING TRAP                       |

**STORAGE PROCEDURES:**

- DESIGNATE A FOREMAN OR SUPERVISOR TO OVERSEE AND ENFORCE PROPER SOLID WASTE PROCEDURES.
- WHEREVER POSSIBLE, MINIMIZE PRODUCTION OF SOLID WASTE MATERIALS.
- DESIGNATE A FOREMAN OR SUPERVISOR TO OVERSEE AND ENFORCE PROPER SOLID WASTE PROCEDURES.
- INSTRUCT CONSTRUCTION WORKERS IN PROPER SOLID WASTE PROCEDURES.
- SEGREGATE POTENTIALLY HAZARDOUS WASTE FROM NON-HAZARDOUS CONSTRUCTION SITE DEBRIS.
- KEEP SOLID WASTE MATERIALS UNDER COVER IN EITHER A CLOSED DUMPSTER OR OTHER ENCLOSED TRASH CONTAINER THAT LIMITS CONTACT WITH RAIN AND RUN OFF.
- STORE WASTE MATERIALS AWAY FROM DRAINAGE DITCHES, SWALES AND CATCH BASINS.
- DO NOT ALLOW TRASH CONTAINERS TO OVERFLOW.
- DO NOT ALLOW WASTE MATERIALS TO ACCUMULATE ON THE GROUND.
- PROHIBIT LITTERING BY WORKERS AND VISITORS.
- POLICE AREA DAILY FOR LITTER AND DEBRIS.
- ENFORCE SOLID WASTE HANDLING AND STORAGE PROCEDURES.

**DISPOSAL PROCEDURES:**

- IF FEASIBLE, SEGREGATE RECYCLABLE WASTES FROM NON-RECYCLABLE WASTE MATERIALS AND DISPOSE OF PROPERLY.
- GENERAL CONSTRUCTION DEBRIS MAY BE HAULED TO A LICENSED CONSTRUCTION DEBRIS LANDFILL (TYPICALLY LESS EXPENSIVE THAN A SANITARY LANDFILL).
- USE WASTE WATER FACILITIES APPROVED BY LOCAL JURISDICTION.
- RUN OFF WHICH COMES INTO CONTACT WITH UNPROTECTED WASTE SHALL BE DIRECTED INTO STRUCTURAL TREATMENT SUCH AS SILT FENCE TO REMOVE DEBRIS.

**EDUCATION:**

- EDUCATE ALL WORKERS ON SOLID WASTE STORAGE AND DISPOSAL PROCEDURES.
- INSTRUCT WORKERS IN IDENTIFICATION OF SOLID WASTE AND HAZARDOUS WASTE.
- HAVE REGULAR MEETINGS TO DISCUSS AND REINFORCE DISPOSAL PROCEDURES INCORPORATE IN REGULAR SAFETY SEMINARS.
- CLEARLY MARK ON ALL SOLID WASTE CONTAINERS WHICH MATERIALS ARE ACCEPTABLE.

**QUALITY CONTROL:**

- FOREMAN AND/OR CONSTRUCTION SUPERVISOR SHALL MONITOR ON-SITE SOLID WASTE STORAGE AND DISPOSAL PROCEDURES.
- DISCIPLINE WORKERS WHO REPEATEDLY VIOLATE PROCEDURES.

**REQUIREMENTS:**

- JOB-SITE WASTE HANDLING AND DISPOSAL EDUCATION AND AWARENESS PROGRAM.
- COMMITMENT BY MANAGEMENT TO IMPLEMENT AND ENFORCE SOLID WASTE MANAGEMENT PROGRAM.
- COMPLIANCE BY WORKERS.
- SUFFICIENT AND APPROPRIATE WASTE STORAGE CONTAINERS.
- TIMELY REMOVAL OF STORED SOLID WASTE MATERIALS.

**LIMITATIONS:**

- ONLY ADDRESSES NON-HAZARDOUS SOLID WASTE.
- ONE PART OF A COMPREHENSIVE CONSTRUCTION SITE MANAGEMENT SITE PROGRAM.

**CONCRETE WASTE MANAGEMENT**

**DESCRIPTION:**  
 CONCRETE WASTE AT CONSTRUCTION SITES COMES IN TWO FORMS:  
 1. EXCESS FRESH CONCRETE MIX INCLUDING TRUCK AND EQUIPMENT  
 2. CONCRETE DUST AND CONCRETE DEBRIS RESULTING FROM DEMOLITION.

BOTH FORMS HAVE THE POTENTIAL TO IMPACT WATER QUALITY THROUGH STORM WATER RUNOFF CONTACT WITH THE WASTE.

**PRIMARY USE:**  
 CONCRETE WASTE IS PRESENT AT MOST CONSTRUCTION SITES. THIS BMP SHOULD BE UTILIZED AT SITES WHERE CONCRETE WASTE IS PRESENT.

**APPLICATIONS:**  
 A NUMBER OF WATER QUALITY PARAMETERS CAN BE AFFECTED BY INTRODUCTION OF CONCRETE - ESPECIALLY FRESH CONCRETE. CONCRETE AFFECTS THE PH OF RUNOFF, CAUSING SIGNIFICANT CHEMICAL CHANGES IN WATER BODIES AND HARMING AQUATIC LIFE. SUSPENDED SOLIDS IN THE FORM OF BOTH CEMENT AND AGGREGATE DUST ARE ALSO GENERATED FROM BOTH FRESH AND DEMOLISHED CONCRETE WASTE.

**CURRENT UNACCEPTABLE WASTE CONCRETE DISPOSAL PRACTICES:**

- DUMPING IN VACANT AREAS ON THE JOB SITE.
- ILLICIT DUMPING OFF SITE.
- DUMPING INTO DITCHES OR DRAINAGE AREAS.

**RECOMMENDED DISPOSAL PRACTICES:**

- AVOID UNACCEPTABLE DISPOSAL PRACTICES LISTED ABOVE.
- DEVELOP PREDETERMINED, SAFE CONCRETE DISPOSAL AREAS.
- PROVIDE A WASHOUT AREA WITH A MINIMUM OF 6 CUBIC FEET OF CONTAINMENT AREA VOLUME FOR EVERY 10 CUBIC YARDS OF CONCRETE PLACED.
- NEVER DUMP WASTE CONCRETE ILLICITLY OR WITHOUT PROPERTY OWNERS KNOWLEDGE AND CONSENT.
- TREAT RUNOFF FROM STORAGE AREAS THROUGH THE USE OF STRUCTURAL CONTROLS AS REQUIRED.

**EDUCATION:**

- DRIVERS AND EQUIPMENT OPERATORS SHOULD BE INSTRUCTED ON PROPER DISPOSAL AND EQUIPMENT WASHING PRACTICES (SEE ABOVE).
- SUPERVISORS MUST BE MADE AWARE OF THE POTENTIAL ENVIRONMENTAL CONSEQUENCES OF IMPROPERLY HANDLED CONCRETE WASTE.

**ENFORCEMENT:**

- THE CONSTRUCTION SITE MANAGER OR FOREMAN MUST ENSURE THAT EMPLOYEES AND PREMIX COMPANIES FOLLOW PROPER PROCEDURES FOR CONCRETE DISPOSAL AND EQUIPMENT WASHING.
- EMPLOYEES VIOLATING DISPOSAL OR EQUIPMENT CLEANING DIRECTIVES MUST BE REEDUCATED OR DISCIPLINED IF NECESSARY.

**DEMOLITION PRACTICES:**

- MONITOR WEATHER AND WIND DIRECTION TO ENSURE CONCRETE DUST IS NOT ENTERING DRAINAGE STRUCTURES AND SURFACE WATERS, WHERE APPROPRIATE, CONSTRUCT SEDIMENT TRAPS OR OTHER TYPES OF SEDIMENT DETENTION DEVICES DOWNSTREAM OF DEMOLITION ACTIVITIES.

**REQUIREMENTS:**

- USE PREDETERMINED DISPOSAL SITES FOR WASTE CONCRETE.
- PROHIBIT DUMPING WASTE CONCRETE ANYWHERE BUT PREDETERMINED AREAS.
- ASSIGN PREDETERMINED TRUCK AND EQUIPMENT CLEANING PROCEDURES.
- EDUCATE DRIVERS AND OPERATORS ON PROPER DISPOSAL AND EQUIPMENT CLEANING PROCEDURES.

**LIMITATIONS:**

- THIS CONCRETE WASTE MANAGEMENT PROGRAM IS ONE PART OF A COMPREHENSIVE CONSTRUCTION SITE WASTE MANAGEMENT PROGRAM.

**NOTE:**  
 ALL PORTIONS OF THE SITE WHICH HAVE THE VEGETATIVE COVER REMOVED AS A RESULT OF THE PROJECT CONSTRUCTION SHALL BE GRADED SMOOTH GRASS SEED SHALL BE SPREAD AND A PROTECTIVE MULCH COVER OF WHEAT STRAW (A MINIMUM OF 4" THICK) SHALL BE PLACED OVER THE SEED TO PREVENT EROSION AND PROMOTE THE GERMINATION OF THE GRASS SEED. CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING AND MAINTAINING THE SEEDED AREAS UNTIL SUCH TIME AS THE GRASS IS ESTABLISHED AND THE POTENTIAL FOR EROSION IS ELIMINATED. NO GROUND SHALL BE LEFT BARE FOR MORE THAN 14 DAYS CONSECUTIVELY.

**SEDIMENTATION BASIN NOTES:**

- DETENTION BASIN IS TO BE CONSTRUCTED AND MAINTAINED AS A SEDIMENTATION BASIN FOR DURATION OF CONSTRUCTION.
- SEDIMENTATION BASIN AND OUTLET PIPE ARE TO BE CONSTRUCTED PRIOR TO ANY OTHER CONSTRUCTION W/IN DRAINAGE BASIN.
- AREA DRAINING TO DETENTION BASIN - ACRES  
 SEDIMENTATION BASIN REQUIRED VOLUME - ACRE-FT

ACTION NO. 2014-00284-1

City of Siloam Springs

DRAINAGE IMPROVEMENT

Sec 1, T.17 N., R. 34 W.

September 2016

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