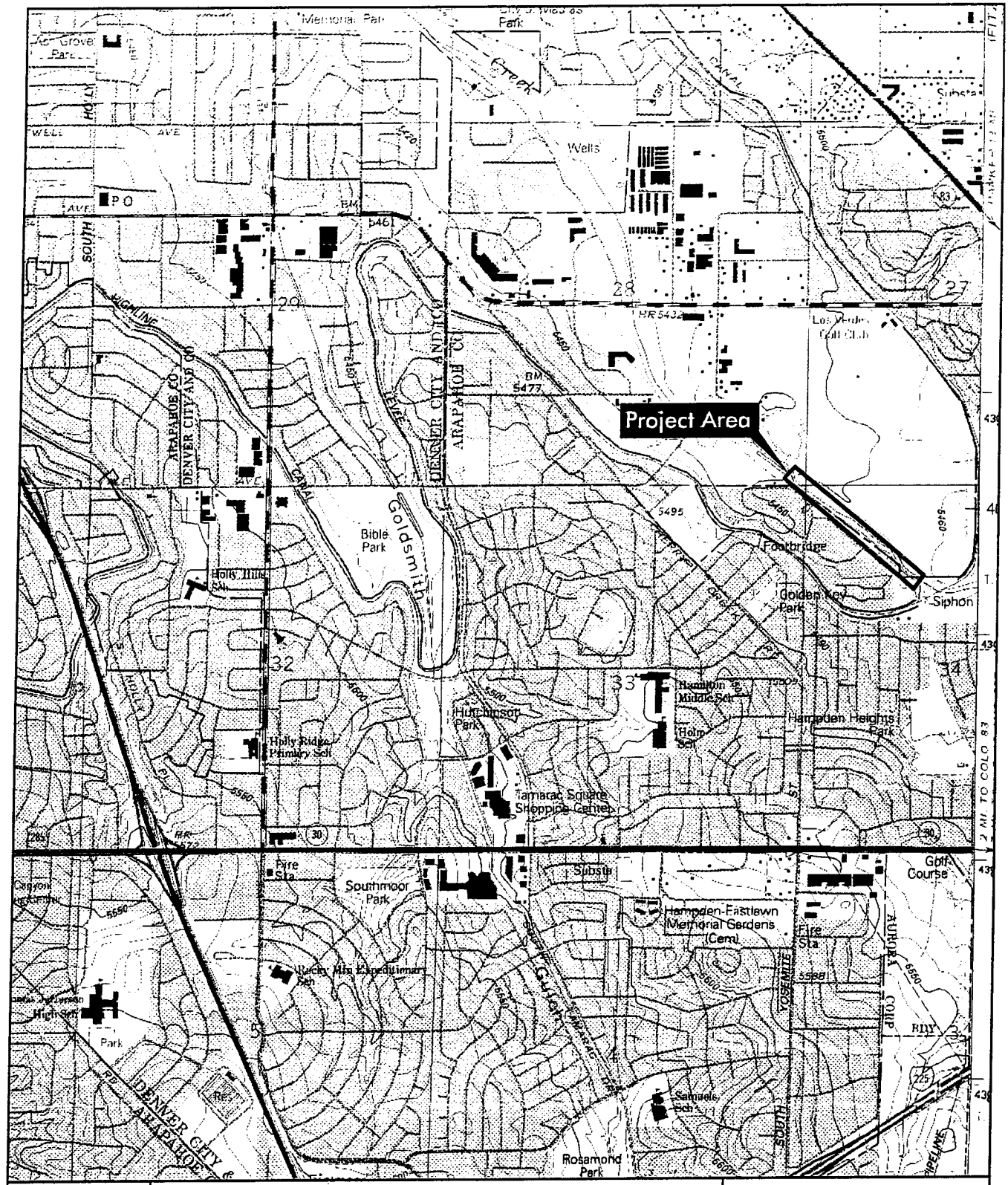


ERO
ERO Resources Corp.
1842 Clarkson Street
Denver, CO 80218
(303) 830-1188
Fax: (303) 830-1199

Cherry Creek Improvement Project
T4S, R67W, NW 1/2 Section 34
UTM Coordinates: Zone 13, 4390500mN, 510000mE
USGS Englewood CO Quadrangle
Arapahoe County, Colorado

0 2000 4000 feet 1 Inch = 2,

N

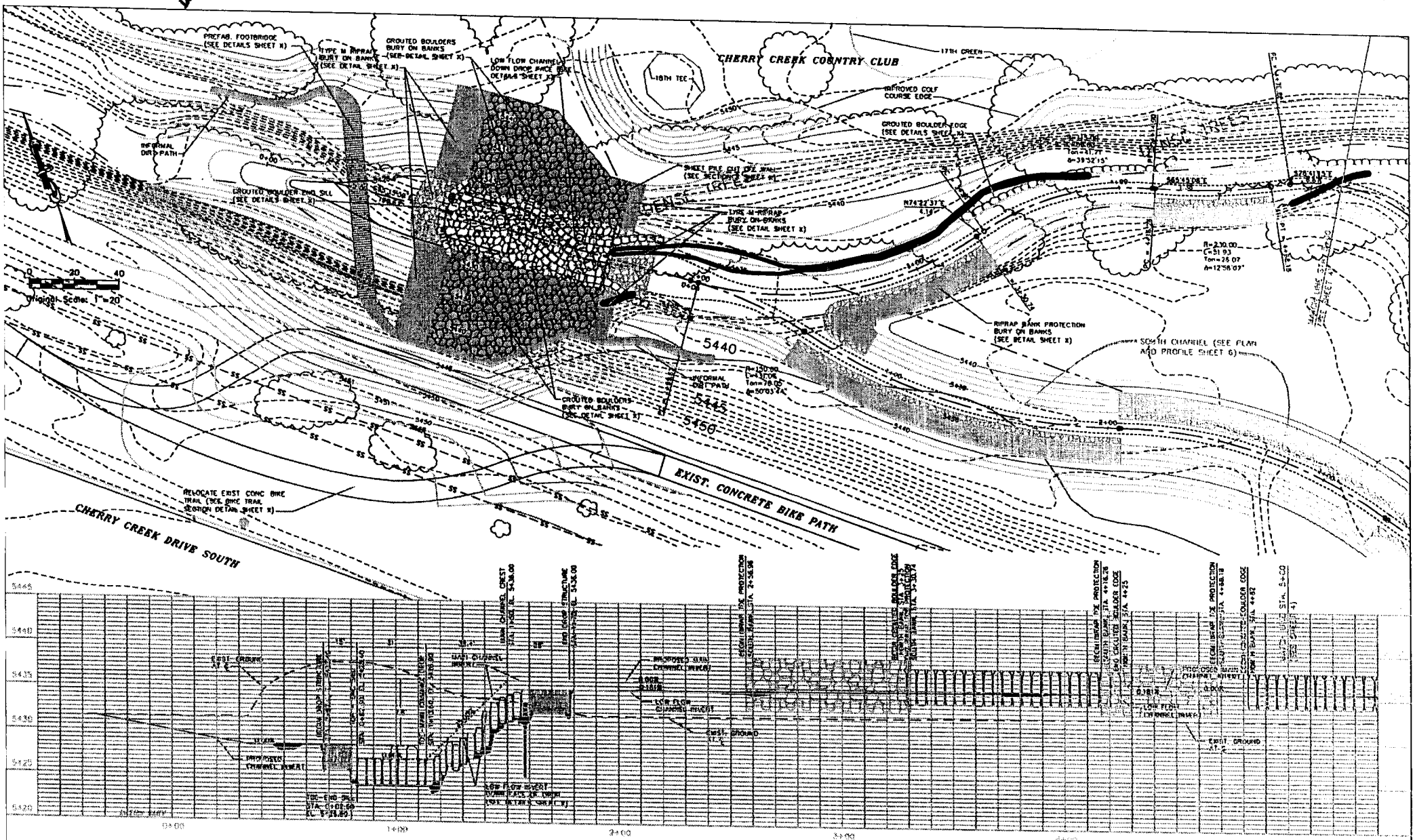
Figure 1
Site Location

Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Project Location Map
Fig. 1/12

Downstream Project limit

match A



Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Plan & Profile
Fig. 2/12

No.	DATE

Arapahoe County

Urban Drainage and Flood Control District

ICON ENGINEERING, INC.

CHERRY CREEK DROP STRUCTURES 20 AND 21

CHANNEL IMPROVEMENTS - PLAN AND POFILE
STATION 0+00 TO 6+00

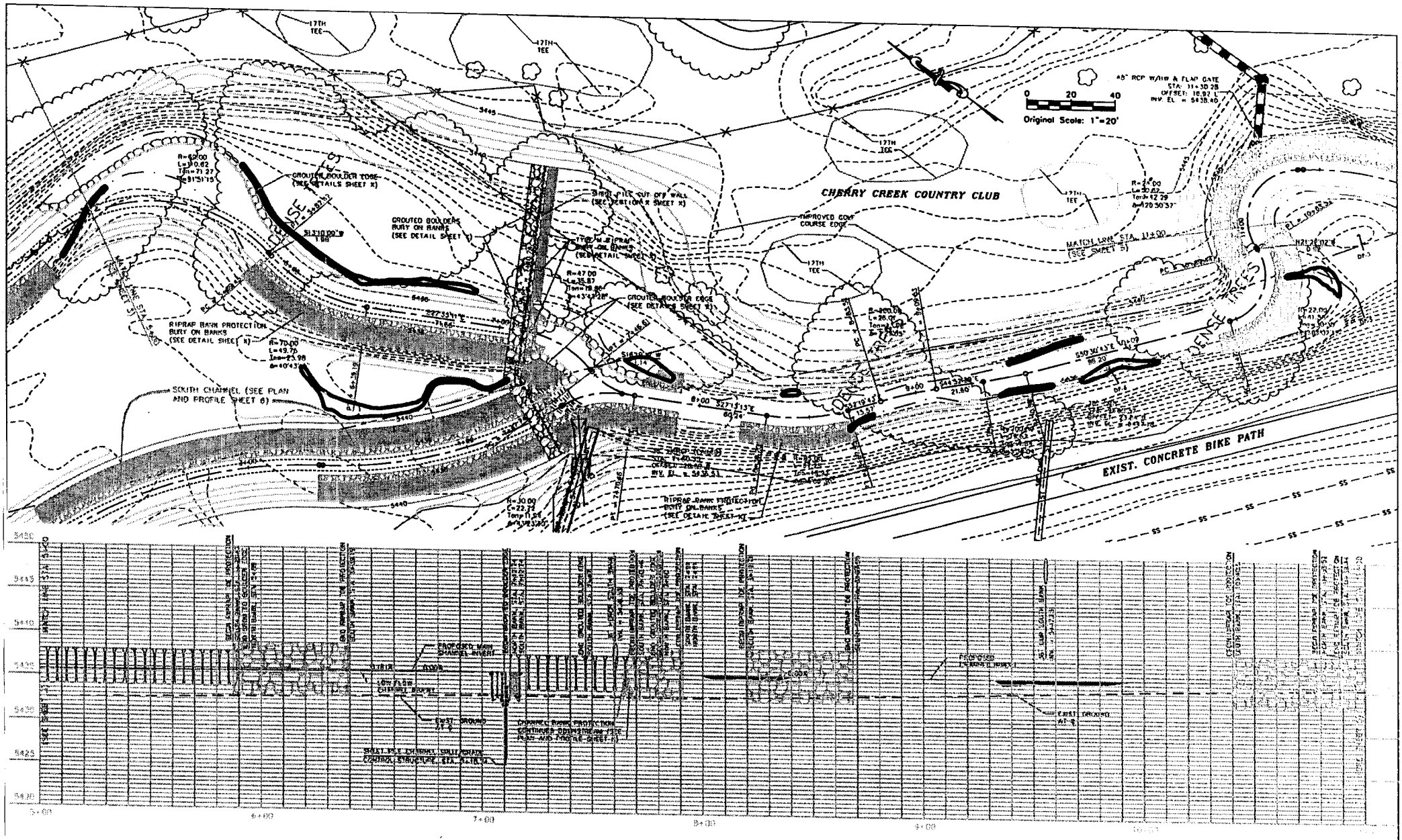
DATE FEB. 04

SHEET 3 OF X

Bold lines are wetland impacts

match A

match B



Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Plan & Profile
Fig. 3/12

No.	DATE

Arapahoe County

Urban Drainage and Flood Control District

ICON ENGINEERING INC.

CHERRY CREEK DROP STRUCTURES 20 AND 21

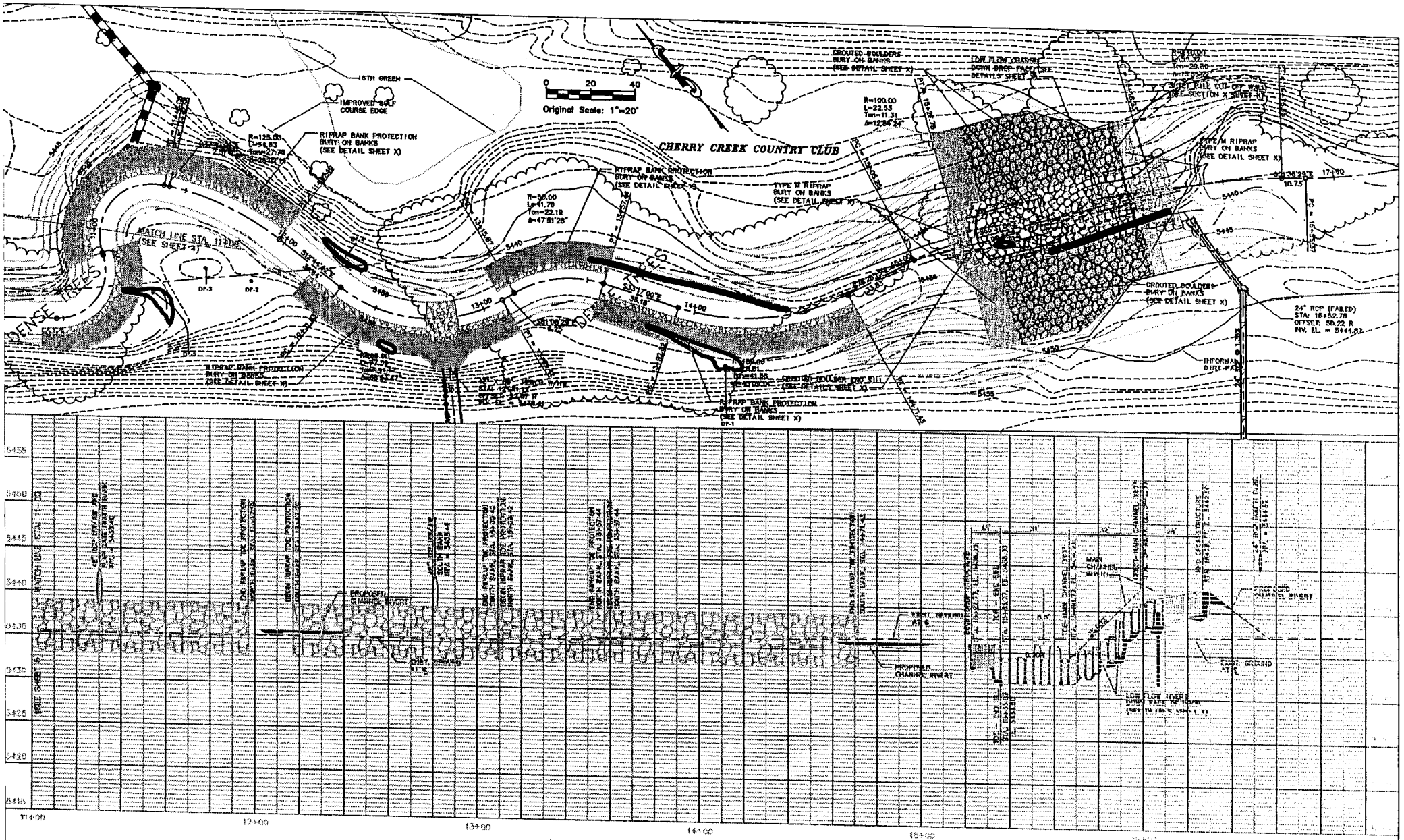
CHANNEL IMPROVEMENTS - PLAN AND PROFILE
STATION 8+00 TO 11+00

DATE FEB. 04

SHEET 4 OF X

match B

match C



Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Plan & Profile
Fig. 4/12

Arapahoe County

Urban Drainage and Flood Control District

ICON ENGINEERING INC

CHERRY CREEK DROP STRUCTURES 20 AND 21

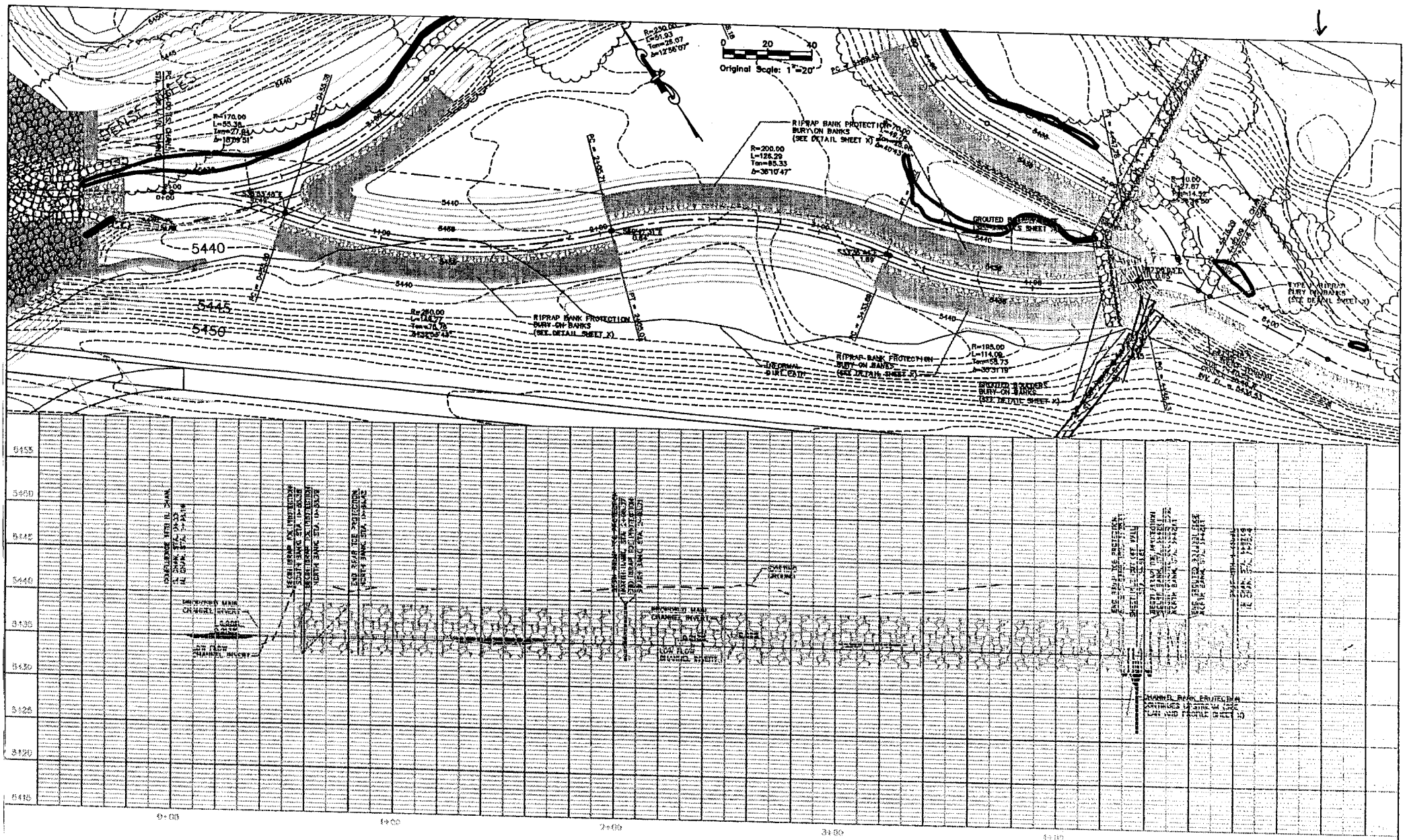
CHANNEL IMPROVEMENTS - PLAN AND PROFILE
STATION 11+00 TO 17+00

DATE FEB. 04

SHEET 5 OF X

match
C

Upstream Project limit



Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Plan & Profile
Fig. 5/12

No.	DATE

Arapahoe County

Urban Drainage and Flood Control District

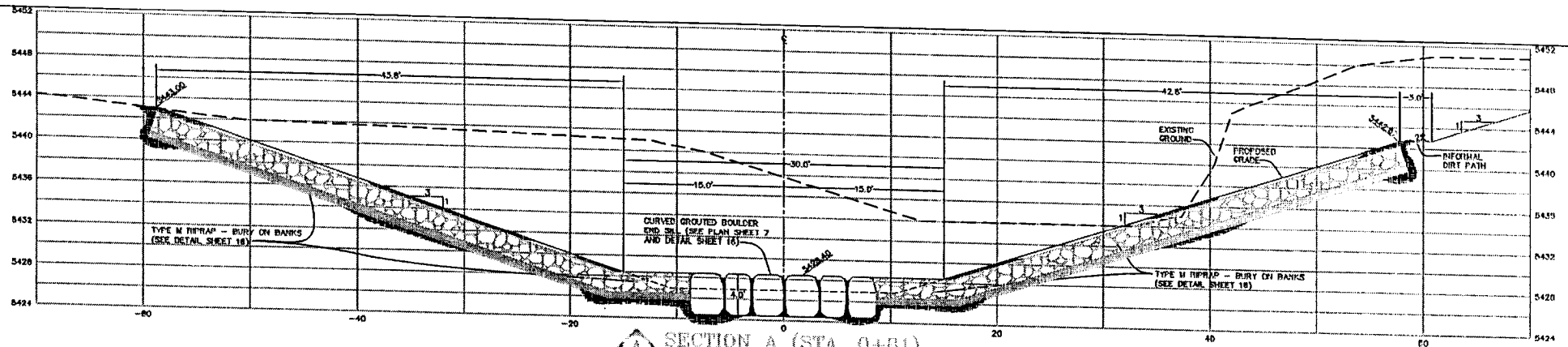
ICON ENGINEERING INC
1101 South Abilene Street, Suite 200, Englewood, CO 80112
Phone (303) 221-0802 / Fax (303) 221-4016

CHERRY CREEK DROP STRUCTURES 20 AND 21

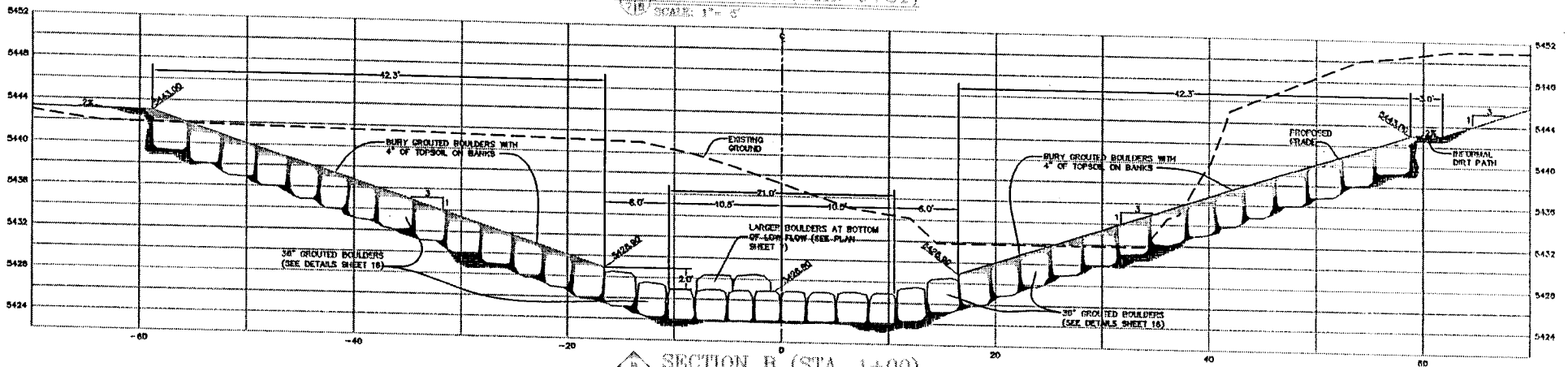
SOUTH CHANNEL AT SPLIT CHANNEL REACH
PLAN AND PROFILE - STATION 0+00 TO 4+82.09

DATE FEB. 04

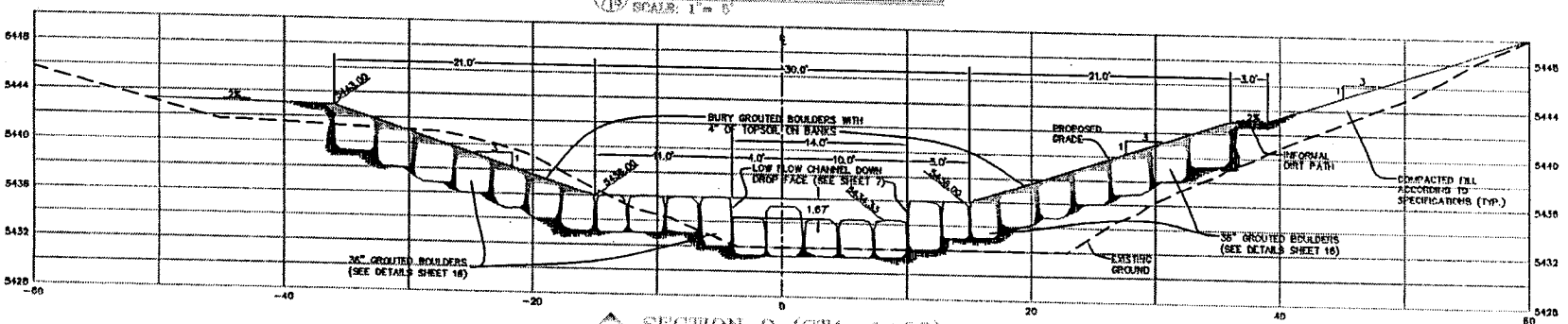
SHEET 6 OF X



SECTION A (STA. 0+61)
SCALE: 1" = 5'



SECTION B (STA. 1+00)
SCALE: 1" = 5'



SECTION C (STA. 1+50)
SCALE: 1" = 5'

Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Detailed Cross Section of Drop Structure
Fig. 6/12

Arapahoe County

Urban Drainage and Flood Control District

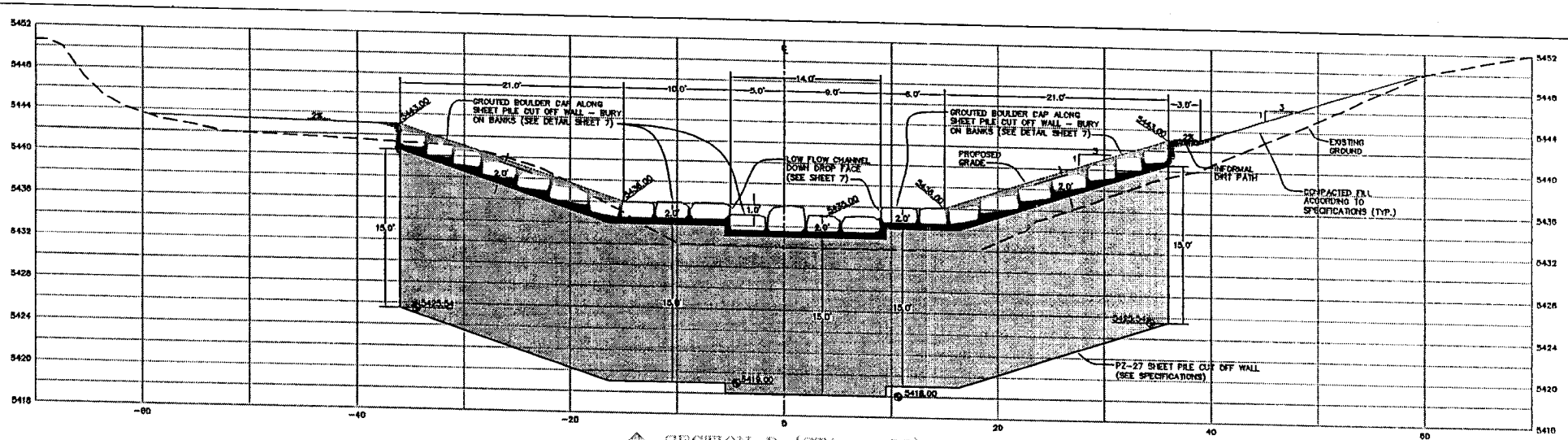
ICON ENGINEERING INC
2100 South Xenon Street, Suite 300, Englewood, CO 80110
Phone (303) 221-0802 / Fax (303) 221-1019

CHERRY CREEK DROP STRUCTURES NO. 20 AND NO. 21

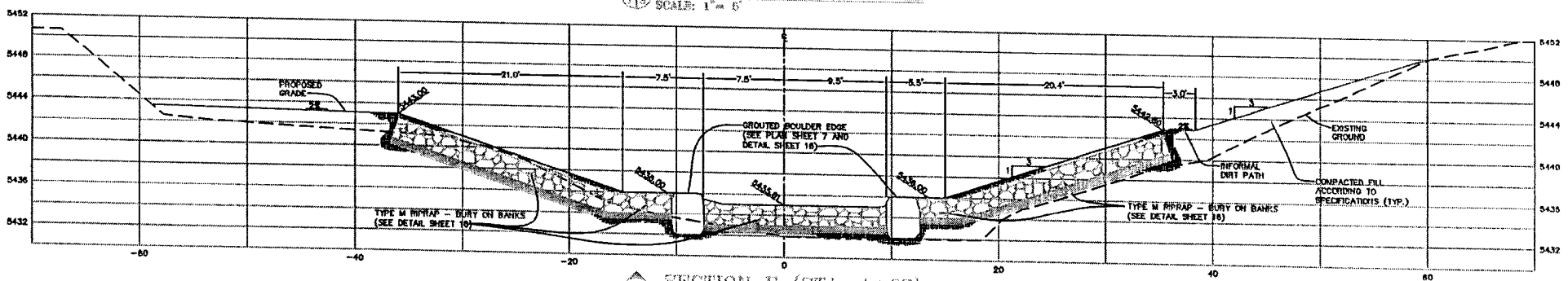
DROP STRUCTURE NO. 20
DETAILED CROSS SECTIONS

DATE JUNE 04

SHEET 8 OF 28



SECTION D (STA. 1+58)
SCALE: 1" = 5'



SECTION E (STA. 1+62)
SCALE: 1" = 5'

NO.	DATE	BY

Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

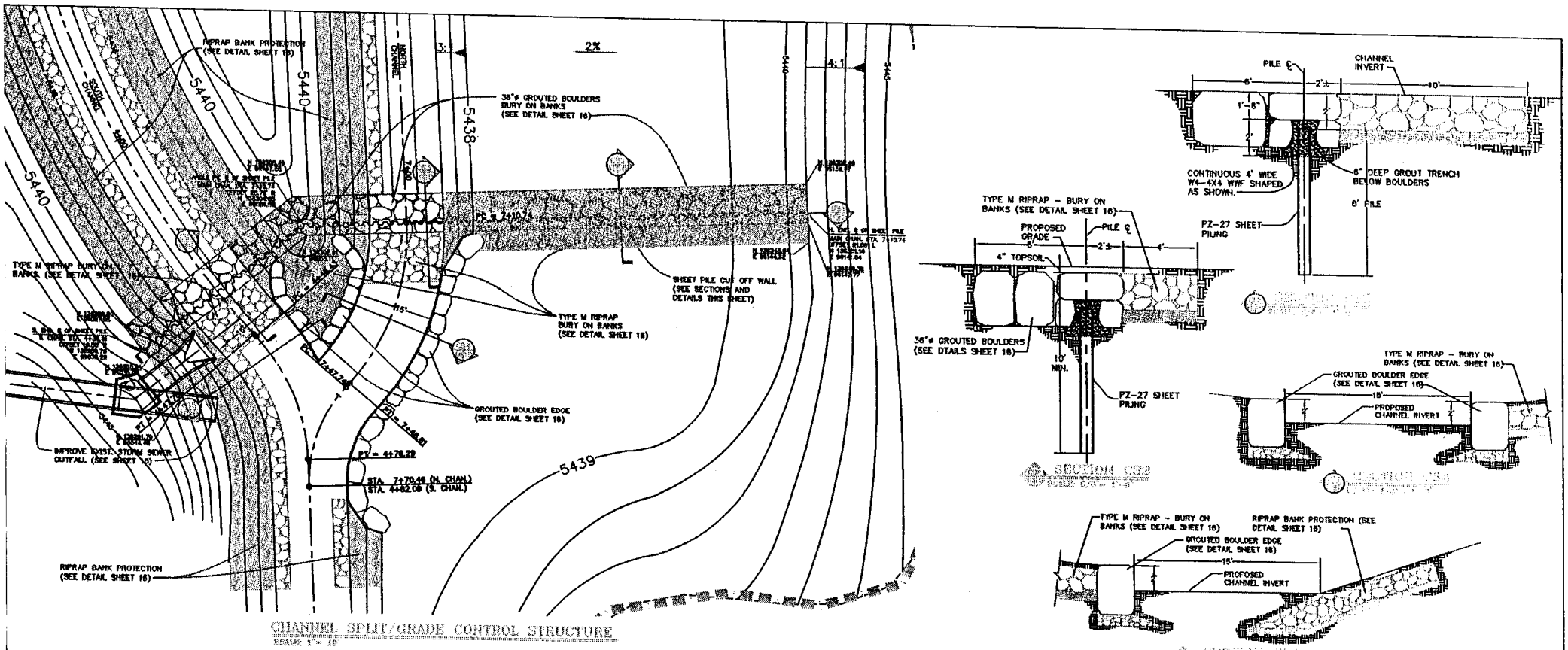
Detailed Cross Section of Drop Structure (cont.)
Fig. 7/12

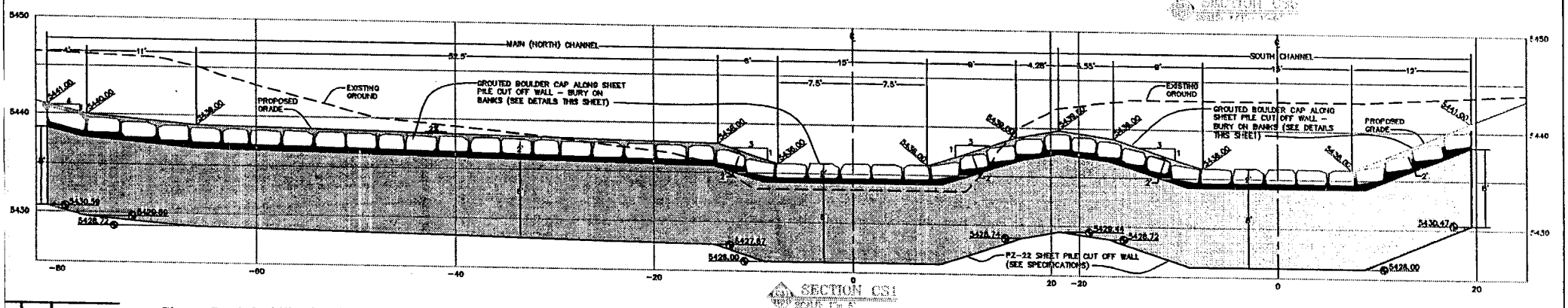
Arapahoe County
Urban Drainage and Flood Control District

ICON ENGINEERING INC
8100 South Akron Street, Suite 305, Englewood, CO 80112
Phone (303) 221-0802 / Fax (303) 221-4019

CHERRY CREEK DROP STRUCTURES NO. 20 AND NO. 21
DROP STRUCTURE NO. 20
DETAILED CROSS SECTIONS

DATE JUNE 04
SHEET 9 OF 28





Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Channel Split / Grade Control Structure Details

Fig. 8/12

Arapahoe County

Urban Drainage and Flood Control District

ICON ENGINEERING INC

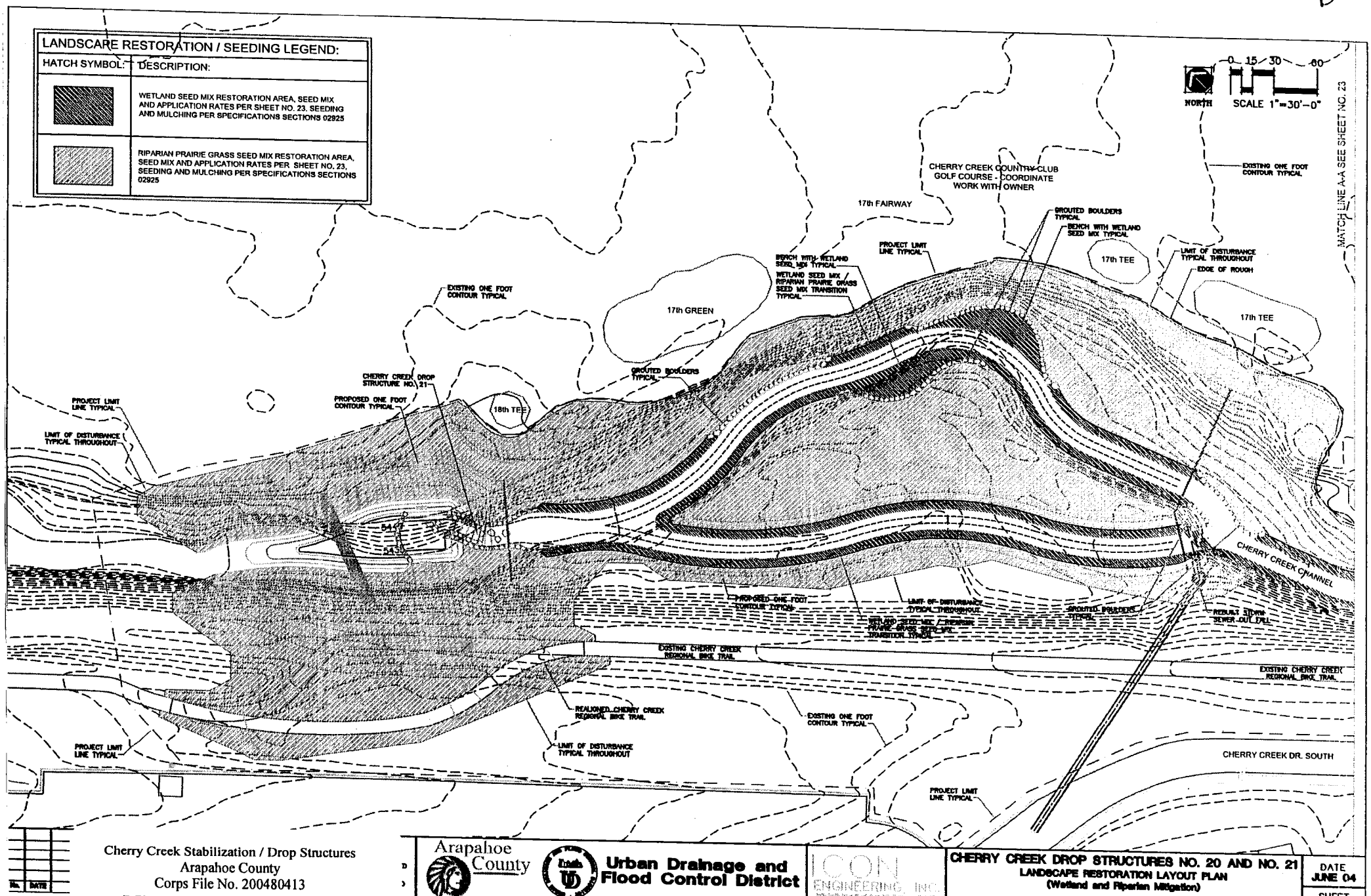
CHERRY CREEK DROP STRUCTURES NO. 20 AND NO. 21

CHANNEL SPLIT/GRADE CONTROL STRUCTURE DETAILED PLAN, SECTIONS, AND DETAILS

DATE JUNE 04

SHEET 10 OF 28

match D



Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Mitigation – Seeding Plan
Fig. 9/12

Arapahoe County

Urban Drainage and Flood Control District

ICON ENGINEERING, INC.

CHERRY CREEK DROP STRUCTURES NO. 20 AND NO. 21
LANDSCAPE RESTORATION LAYOUT PLAN
(Wetland and Riparian Mitigation)

DATE JUNE 04

SHEET 22 OF 28

match
D

MATCH LINE A-A SEE SHEET NO. 22

LANDSCAPE RESTORATION// SEEDING MIXES:

WETLAND MIX:

COMMON NAME:	BOTANICAL NAME:	SEED RATE-%	PLS Lbs/Acre
Alkali Bulrush	*Scirpus plaudosus*	10%	0.42
American Sloughgrass	*Beckmannia syzigachne*	15%	0.24
Canada Wildrye	*Elymus canadensis*	15%	1.00
Creeping Spikerush	*Eleocharis plaustris*	5%	0.08
Hardstem Bulrush	*Scirpus acutus*	10%	0.50
Nebraska Sedge	*Carex nebrascensis*	10%	0.38
Prairie Cordgrass	*Spartina pectinata*	10%	1.00
Switchgrass	*Panicum virgatum*	10%	0.50
Western Wheatgrass	*Pascopyrum (Agropyron) smithii*	15%	2.40
		100%	6.72

Drill Seeded Rate: 6.72 PLS Lbs/Acre
Broadcast Rate: 13.44 PLS Lbs/Acre
Small Areas Rate: 26.88 PLS Lbs/Acre

LANDSCAPE RESTORATION / SEEDING MIXES:

RIPARIAN PRAIRIE GRASS MIX:

COMMON NAME:	BOTANICAL NAME:	SEED RATE-%	PLS Lbs/Acre
Big Bluestem	*Andropogon gerardii*	10%	1.10
Prairie Cordgrass	*Spartina pectinata*	25%	2.50
Prairie Sandreed	*Calamovilfa longifolia*	10%	0.70
Slender Wheatgrass	*Elymus trachycaulus*	5%	0.55
Western Wheatgrass	*Pascopyrum (Agropyron) smithii*	10%	1.60
Switchgrass	*Panicum virgatum*	5%	0.25
Canada Wildrye	*Elymus canadensis*	25%	3.75
Indiangrass	*Sorghastrum nutans*	10%	1.00
		100%	11.45

Drill Seeded Rate: 11.45 PLS Lbs/Acre
Broadcast Rate: 22.90 PLS Lbs/Acre
Small Areas Rate: 45.80 PLS Lbs/Acre

NORTH
0 15 30 60
SCALE 1"=30'-0"

EXISTING STORM SEWER TO REMAIN
EXISTING ONE FOOT CONTOUR TYPICAL
16th FAIRWAY
CHERRY CREEK COUNTRY CLUB GOLF COURSE - COORDINATE WORK WITH OWNER
16th FAIRWAY
17th TEE
WETLAND SEED MIX RIPARIAN PRAIRIE GRASS SEED MIX TRANSITION TYPICAL
PROJECT LIMIT LINE TYPICAL
16th GREEN
CHERRY CREEK DROP STRUCTURE NO. 20
PROPOSED ONE FOOT CONTOUR TYPICAL
WETLAND SEED MIX RIPARIAN PRAIRIE GRASS SEED MIX TRANSITION TYPICAL
LIMIT OF DISTURBANCE TYPICAL THROUGHOUT
17th TEE
17th TEE
LIMIT OF DISTURBANCE TYPICAL THROUGHOUT
CHERRY CREEK CHANNEL
LIMIT OF DISTURBANCE TYPICAL THROUGHOUT
LIMIT OF DISTURBANCE TYPICAL THROUGHOUT
PROJECT LIMIT LINE TYPICAL
EXISTING CHERRY CREEK REGIONAL BIKE TRAIL
PROPOSED ONE FOOT CONTOUR TYPICAL
WETLAND SEED MIX RIPARIAN PRAIRIE GRASS SEED MIX TRANSITION TYPICAL
CHERRY CREEK DR. SOUTH
EXISTING ONE FOOT CONTOUR TYPICAL
PROJECT LIMIT LINE TYPICAL
CHERRY CREEK DR. SOUTH

Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Mitigation – Seeding Plan (cont.)
Fig. 10/12

Arapahoe County
Urban Drainage and Flood Control District
ICON ENGINEERING, INC.

CHERRY CREEK DROP STRUCTURES NO. 20 AND NO. 21
LANDSCAPE RESTORATION LAYOUT PLAN
(Wetland and Riparian Mitigation)

DATE JUNE 04
SHEET 23 OF 28

match
E

LANDSCAPE RESTORATION / PLANTING LEGEND:	
PLANT SYMBOL:	DESCRIPTION:
+	UPLAND TREE - INSTALLED IN CONFORMANCE WITH INSTALLATION DETAIL A/28 AND SPECIFICATION SECTION 02900 LANDSCAPE PLANTING. SEE PLANT MATERIAL SCHEDULE FOR SPECIES
+	LOWLAND TREE - INSTALLED IN CONFORMANCE WITH INSTALLATION DETAIL A/28 AND SPECIFICATION SECTION 02900 LANDSCAPE PLANTING. SEE PLANT MATERIAL SCHEDULE FOR SPECIES
⊙	LOWLAND SHRUB - INSTALLED IN CONFORMANCE WITH INSTALLATION DETAIL B/28 AND SPECIFICATION SECTION 02900 LANDSCAPE PLANTING. SEE PLANT MATERIAL SCHEDULE FOR SPECIES

PLANT MATERIAL SCHEDULE:					
Symbol:	Common Name:	Botanical Name:	Qty:	Size:	Notes:
UPLAND TREES:					
CW	Plains Cottonwood	*(populus sargentii)*	68	2" cal.	B & B
LOWLAND TREES:					
RB	Native River Birch	*(betula fontinalis)*	23	#7	Container
TA	Thinleaf Alder	*(alnus tenuifolia)*	54	7' Clump	B & B
CC	Native Chokecherry	*(prunus virginiana melanocarpa)*	49	#7	Container
PL	Peachleaf Willow	*(salix amygdaloides)*	26	5 Gal.	Container
LOWLAND SHRUBS:					
BS	Blue Stem Willow	*(salix irrorata)*	54	5 Gal.	Container

NORTH
0 15 30 60
SCALE 1"=30'-0"

MATCH LINE A-A SEE SHEET NO. 25

CHERRY CREEK COUNTRY CLUB GOLF COURSE - COORDINATE WORK WITH OWNER

17th FAIRWAY

17th GREEN

17th TEE

18th TEE

EDGE OF ROUGH

EXISTING ONE FOOT CONTOUR TYPICAL

PROPOSED ONE FOOT CONTOUR TYPICAL

GROUTED BOULDERS TYPICAL

PROJECT LIMIT LINE TYPICAL

CHERRY CREEK DROP STRUCTURE NO. 21

REBUILT STORM SEWER OUT FALL

EXISTING CHERRY CREEK REGIONAL BIKE TRAIL

REALIGNED CHERRY CREEK REGIONAL BIKE TRAIL

CHERRY CREEK CHANNEL

CHERRY CREEK DR. SOUTH

Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Mitigation – Tree & Shrub Planting Plan

Fig. 11/12

Arapahoe County

Urban Drainage and Flood Control District

ICON ENGINEERING, INC.

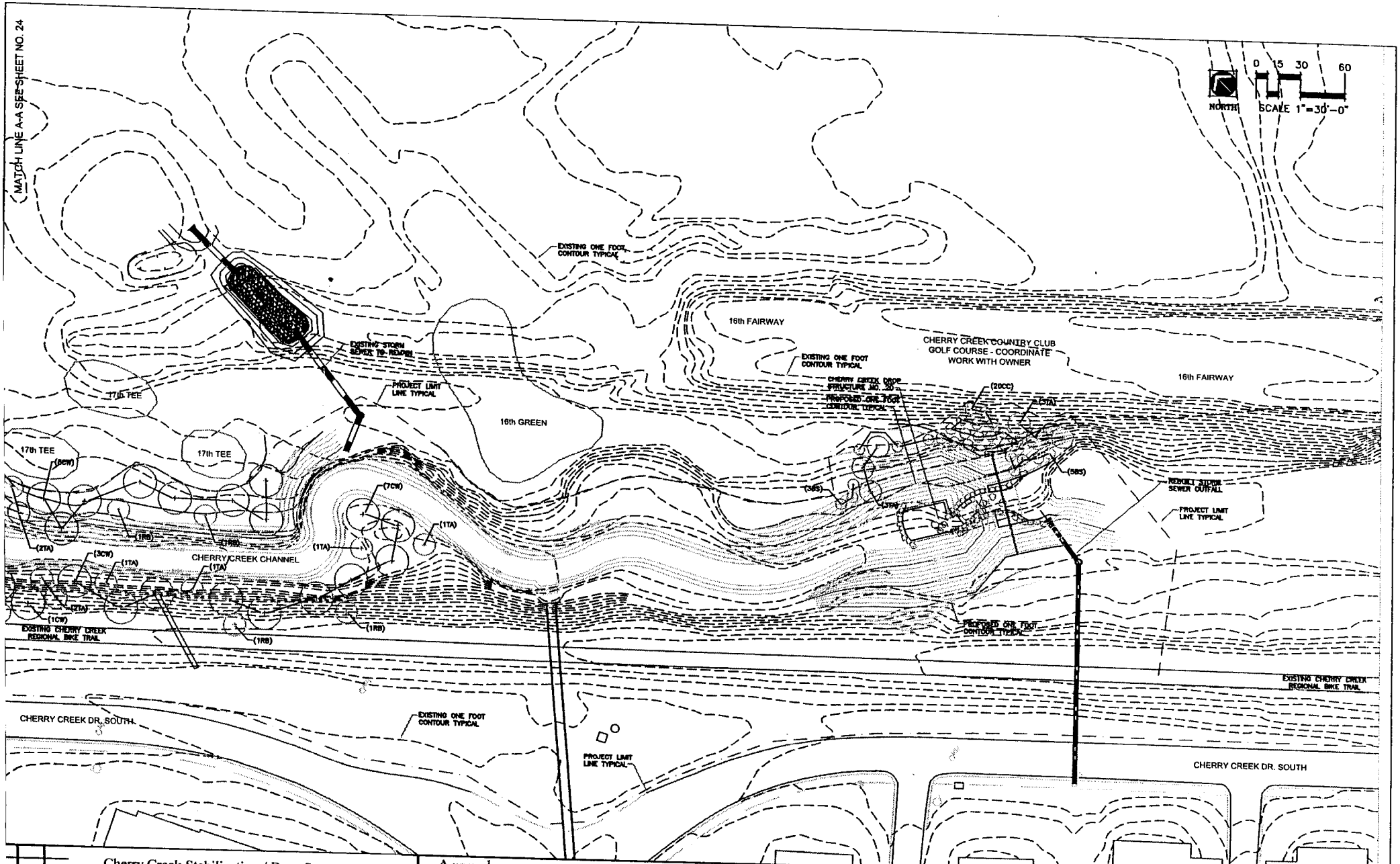
CHERRY CREEK DROP STRUCTURES NO. 20 AND NO. 21

LANDSCAPE RESTORATION LAYOUT PLAN
(Trees and Shrubs)

DATE
JUNE 04

SHEET
24 OF 28

match
E



Cherry Creek Stabilization / Drop Structures
Arapahoe County
Corps File No. 200480413

Mitigation – Tree & Shrub Planting Plan (cont.)

Fig. 12/12

Arapahoe County

Urban Drainage and Flood Control District

ICON ENGINEERING, INC.

CHERRY CREEK DROP STRUCTURES NO. 20 AND NO. 21

LANDSCAPE RESTORATION LAYOUT PLAN
(Trees and Shrubs)

DATE JUNE 04

SHEET 25 OF 28