

Madison, Wisconsin

CITY OF MADISON

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

PLAN OF PROPOSED IMPROVEMENT

MCKENNA FLOOD MITIGATION

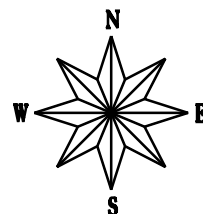
CITY PROJECT NO. 12011

CONTRACT NO. XXXX

INDEX OF SHEETS

SHEET NO.	1	TITLE
SHEET NO.	D1	TYPICAL SECTION & DETAIL
SHEET NO.	P1-P9	CHANNEL PLAN & PROFILES
SHEET NO.	X1-X10	CHANNEL CROSS SECTIONS
SHEET NO.	S1-S3	BOX CULVERT SHEETS
SHEET NO.	R1-R3	CHANNEL AND RETAINING WALL SHEETS

PROJECT
LOCATION



CONVENTIONAL SIGNS

FIELD VERIFY ALL UTILITY LOCATIONS

GAS	— G —
STORM SEWER	— ST —
SANITARY SEWER	— SAN —
WATER	— W —
OVERHEAD ELECTRIC	— OH —
POWER POLE	□

NOTES:

ALL GUTTERS SHALL DRAIN WITH A MINIMUM GRADE OF 0.50% TOWARD STORM SEWER INLETS.

SIDEWALK RAMPS AND CURB THRU SIDEWALK RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1" PER 12". SIDEWALK AND CURB RAMPS SHALL BE CONSTRUCTED WITH A SIDE SLOPE OF 2.00%. SIDEWALK SHALL HAVE A MINIMUM LONGITUDINAL SLOPE OF 0.50% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.00%.

PUBLIC IMPROVEMENT PROJECT APPROVED

BY THE COMMON COUNCIL
OF MADISON, WISCONSIN

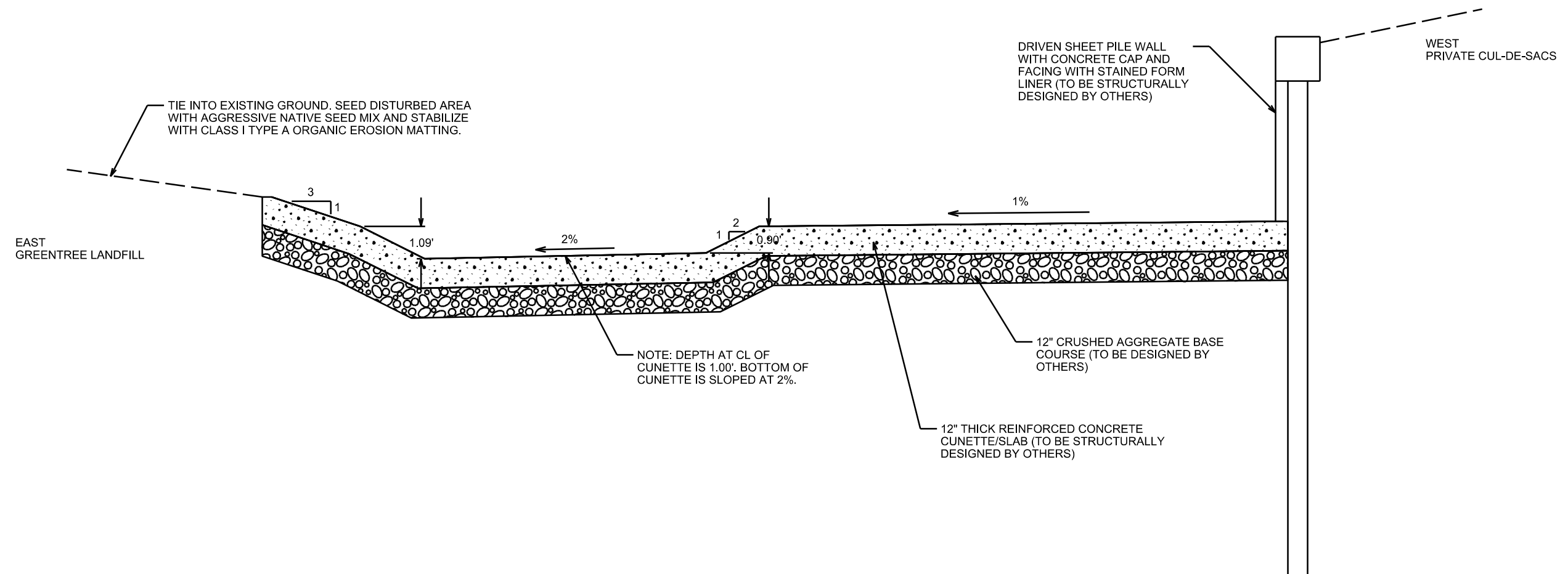
PUBLIC IMPROVEMENT DESIGN
APPROVED BY:

City Engineer

Date

STORM SEWER
DESIGNED BY:

DRAFT
PRELIMINARY
NOT FOR CONSTRUCTION

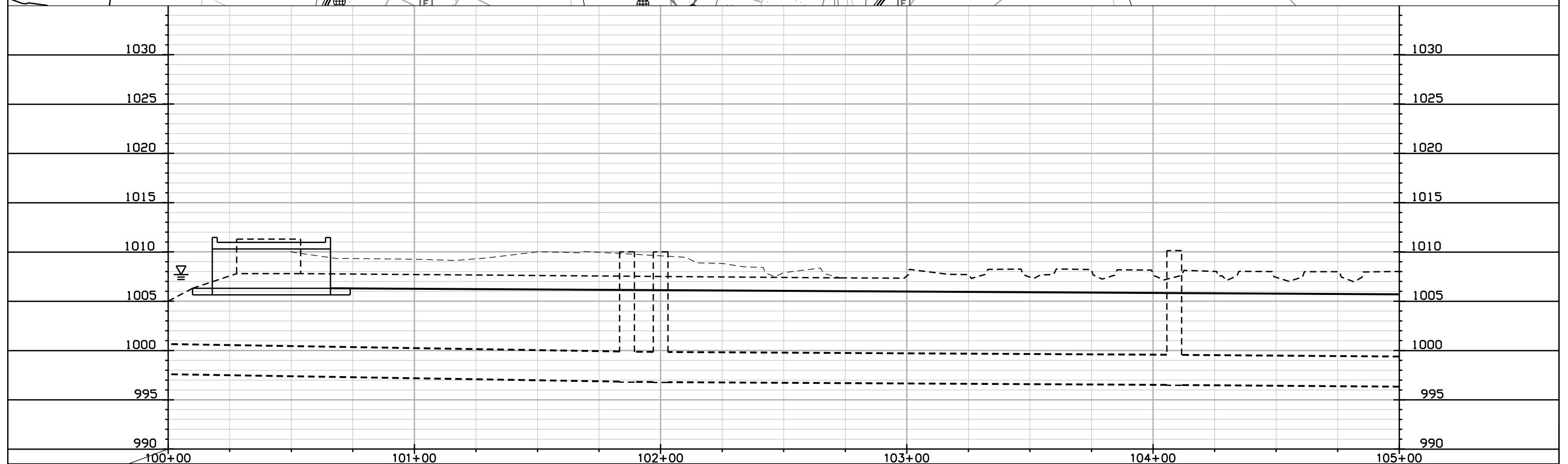
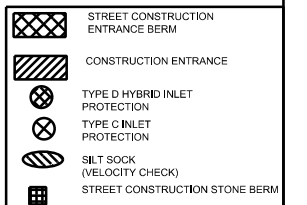


GREENTREE SOUTH SECTION CITY OF MADISON

BOX CULVERT TO BE CONSTRUCTED IN ACCORDANCE
WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION - PART V, 2019 EDITION

PHASED TEMPORARY FLOW
DIVERSION (SEE SHEET R-1)

GREENTREE SOUTH SECTION:
ESTIMATED CUT VOLUME = 7,543 C.Y.
ESTIMATED DISTURBED AREA = 113,713 S.F.

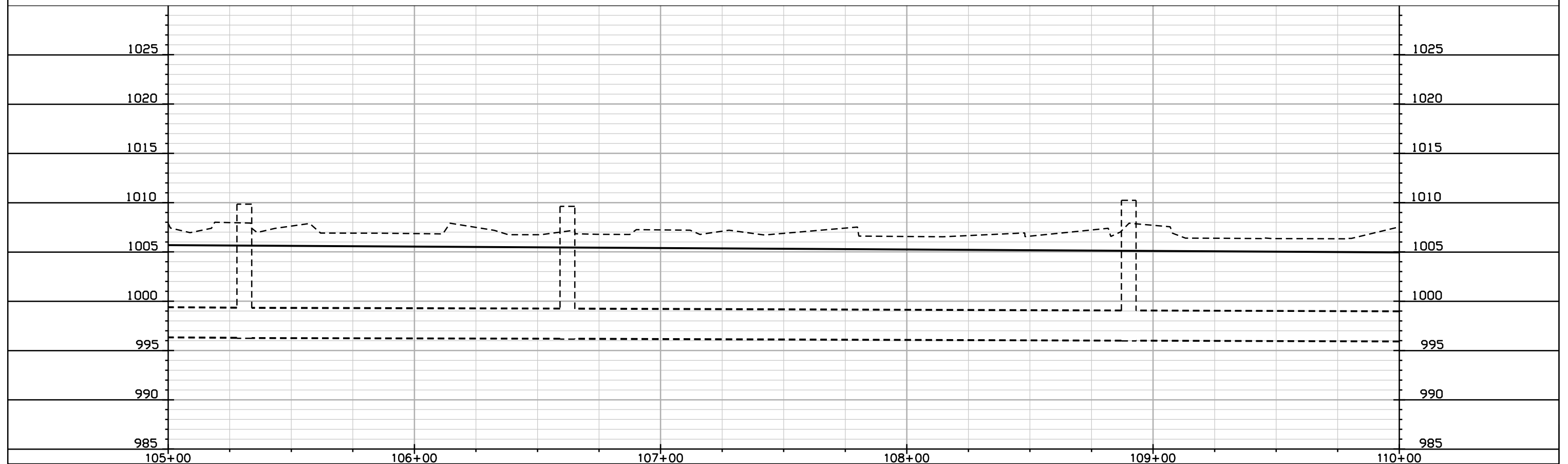


GREENTREE SOUTH SECTION CITY OF MADISON

MATCHLINE STA 105+00.00
 MATCHLINE STA 110+00.00
 HORIZONTAL DATUM: WCCS83(07)
 VERTICAL DATUM: NAVD88
 PHASED TEMPORARY FLOW DIVERSION (SEE SHEET R-2)
 36"
 SAN
 ST
 BUILDING
 BUILDING
 BUILDING
 NW12
 NW13
 NW14
 GP12
 GP13
 105+00
 106+00
 107+00
 108+00
 109+00
 110+00
 GREENTREE
 ESTIMATED CUT
 ESTIMATED DISTURBANCE

- | | |
|---|--------------------------------------|
|  | STREET CONSTRUCTION
ENTRANCE BERM |
|  | CONSTRUCTION ENTRANCE |
|  | TYPE D HYBRID INLET
PROTECTION |
|  | TYPE C INLET
PROTECTION |
|  | SILT SOCK
(VELOCITY CHECK) |
|  | STREET CONSTRUCTION STONE BERM |

GREENTREE SOUTH SECTION:
ESTIMATED CUT VOLUME = 7,543 C.Y.
ESTIMATED DISTURBED AREA = 113,713 S.F.



BOX CULVERT TO BE CONSTRUCTED IN ACCORDANCE
WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION - PART V, 2019 EDITION

MCKENNA FLOOD MITIGATION
PROJECT NO. 12011

SHEET NO.
P-3

PLAN AND PROFILE

GREENTREE SOUTH SECTION CITY OF MADISON

HORIZONTAL DATUM: WCCS83(07)
VERTICAL DATUM: NAVD88

BARRIER LOCATION PHASED WITH
CULVERT REMOVAL & CONSTRUCTION
AND FLOW DIVERSION

PHASED TEMPORARY
FLOW DIVERSION

GREENTREE SOUTH SECTION:
ESTIMATED CUT VOLUME = 7,543 C.Y.
ESTIMATED DISTURBED AREA = 113,713 S.F.

- STREET CONSTRUCTION
ENTRANCE BERM
- CONSTRUCTION ENTRANCE
- TYPE D HYBRID INLET
PROTECTION
- TYPE C INLET
PROTECTION
- SILT SOCK
(VELOCITY CHECK)
- STREET CONSTRUCTION STONE BERM

1025

1020

1015

1010

1005

1000

995

990

985

110+00

111+00

112+00

113+00

114+00

115+00

1025

1020

1015

1010

1005

1000

995

990

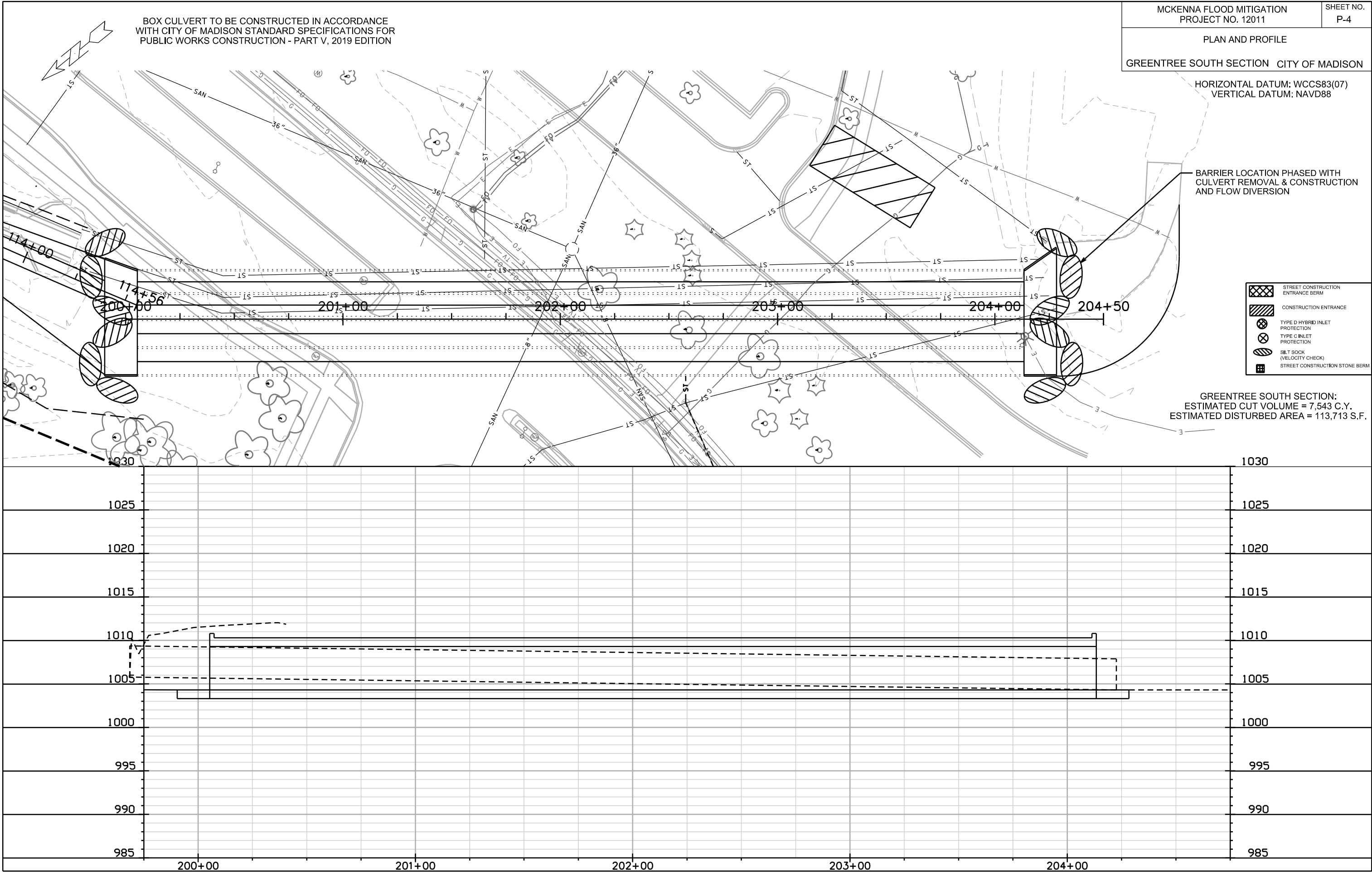
985

PLOT SCALE: _____

PLOT NAME: _____

REV. DATE: _____

ORIGINATOR: CITY OF MADISON, STREETS DIVISION



PLOT SCALE: _____

PLOT NAME: _____

REV. DATE: _____

ORIGINATOR: CITY OF MADISON, STREETS DIVISION

WATTS ROAD SECTION	CITY OF MADISON
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STRUCK STREET

PRIVATE
DRIVEWAY

PHASED TEMPORARY FLOW DIVERSION

WATTS ROAD AND SCHROEDER ROAD SECTIONS:
ESTIMATED CUT VOLUME = 2,599 C.Y.
ESTIMATED DISTURBED AREA = 90,761 S.F.

- | | |
|---|--------------------------------------|
|  | STREET CONSTRUCTION
ENTRANCE BERM |
|  | CONSTRUCTION ENTRANCE |
|  | TYPE D HYBRID INLET
PROTECTION |
|  | TYPE C INLET
PROTECTION |
|  | SILT SOCK
(VELOCITY CHECK) |
|  | STREET CONSTRUCTION STONE BERM |



BOX CULVERT TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - PART V, 2019 EDITION

MCKENNA FLOOD MITIGATION
PROJECT NO. 12011

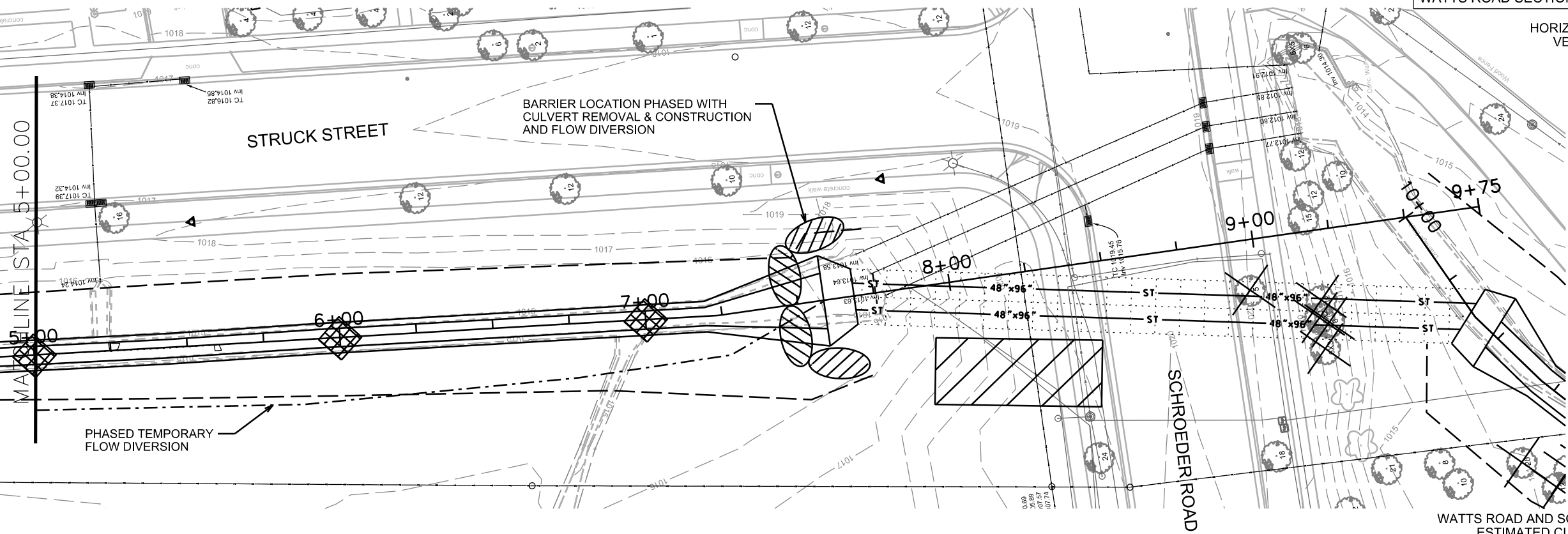
SHEET NO.
P-6

PLAN AND PROFILE

WATTS ROAD SECTION

CITY OF MADISON

HORIZONTAL DATUM: WCCS83(07)
VERTICAL DATUM: NAVD88



WATTS ROAD AND SCHROEDER ROAD SECTIONS:
ESTIMATED CUT VOLUME = 2,599 C.Y.
ESTIMATED DISTURBED AREA = 90,761 S.F.

1030

1025

1020

1015

1010

1005

1000

995

990

985

5+00

6+00

7+00

8+00

9+00

10+00

1030

1025

1020

1015

1010

1005

1000

995

990

985

PLOT SCALE: _____

PLOT NAME: _____

REV. DATE: _____

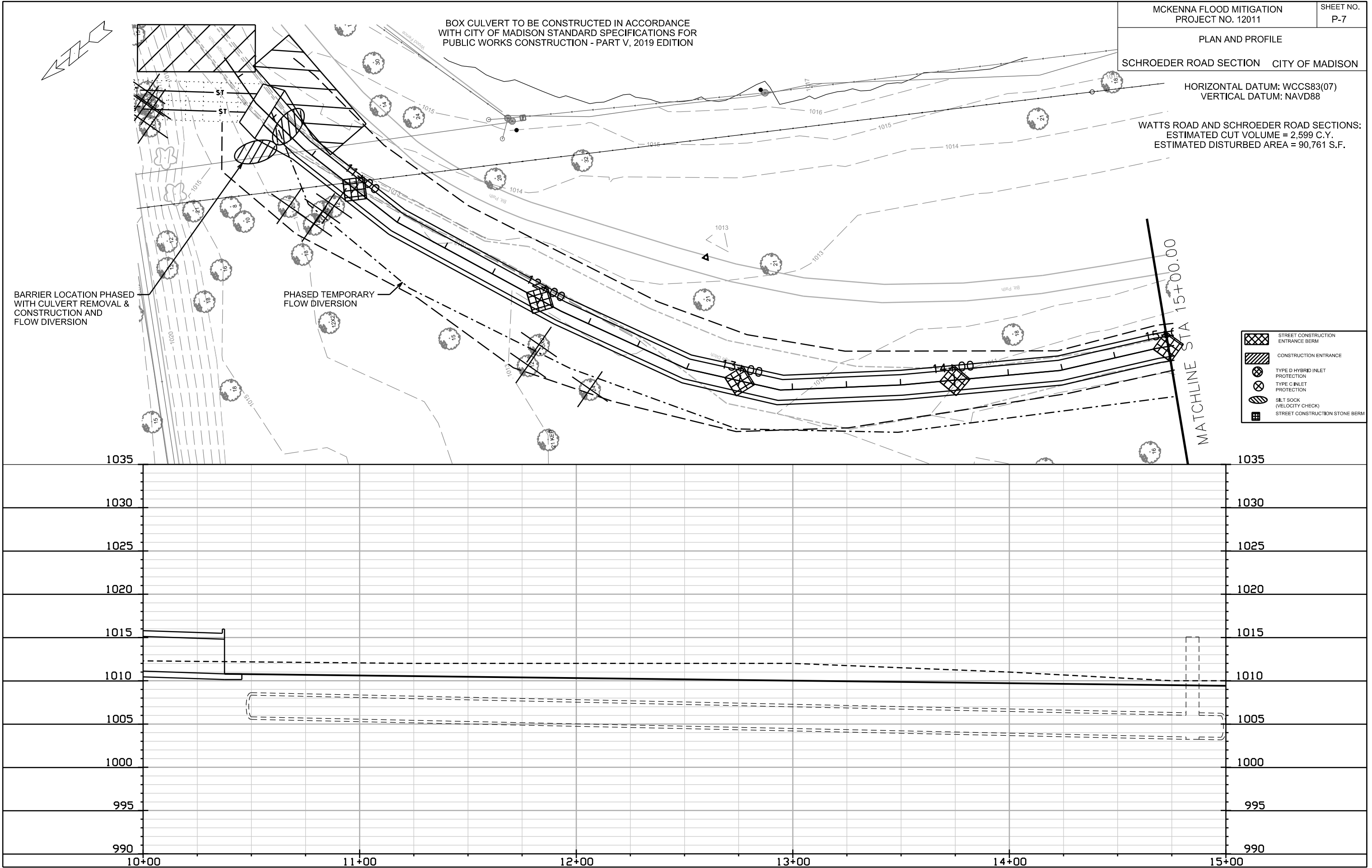
ORIGINATOR: CITY OF MADISON, STREETS DIVISION

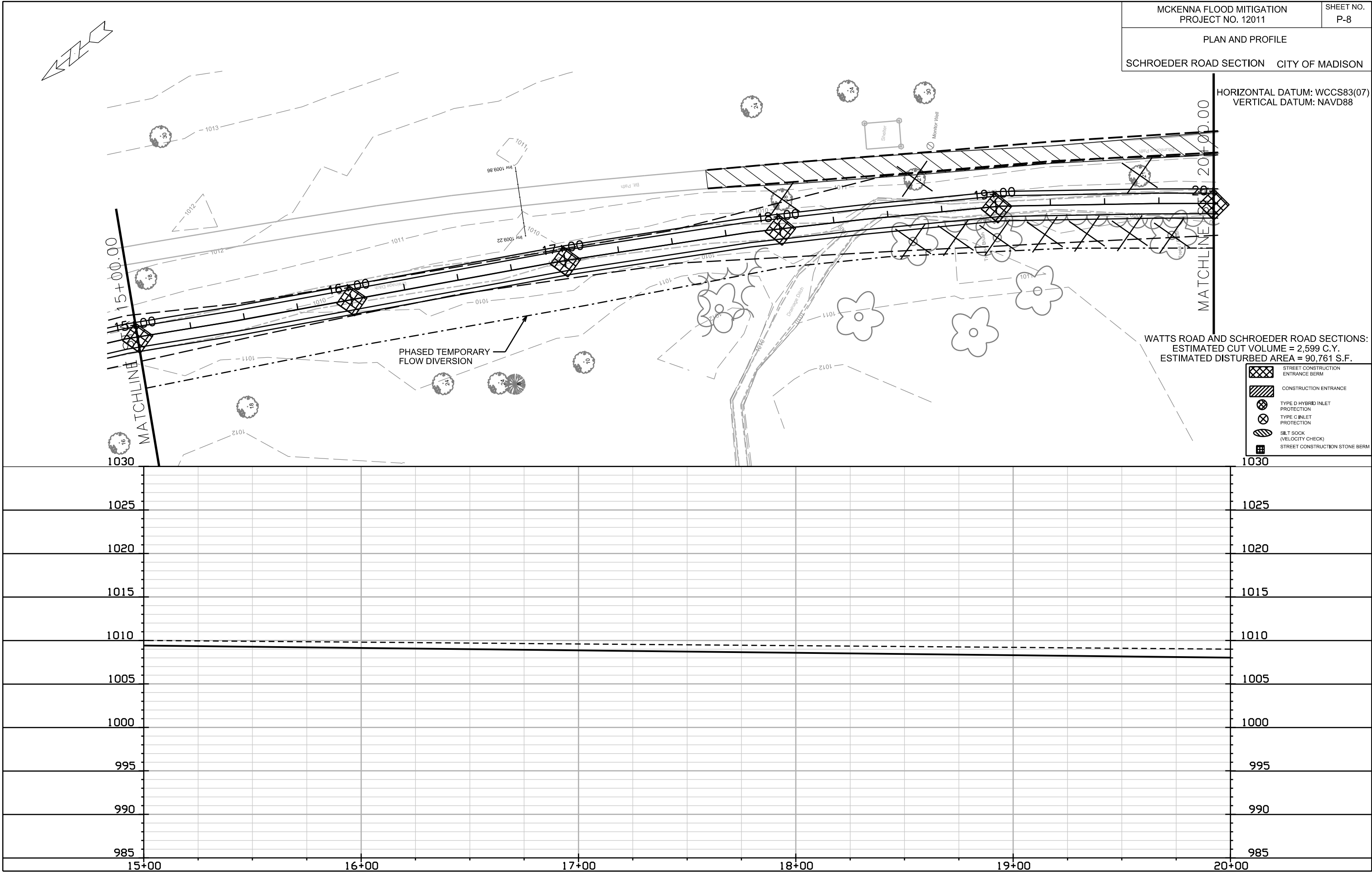
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ORIGINATOR: CITY OF MADISON, STREETS DIVISION



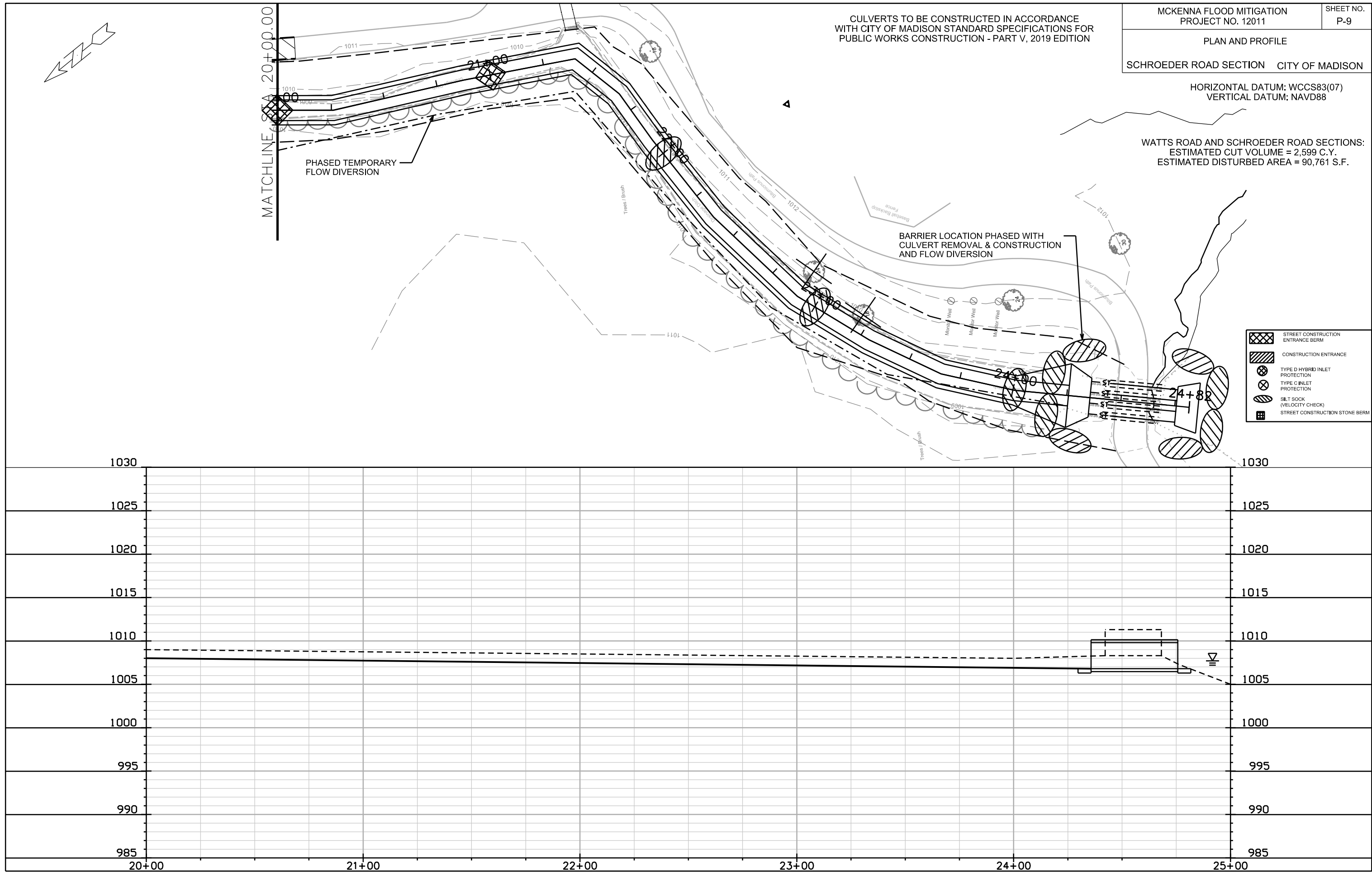


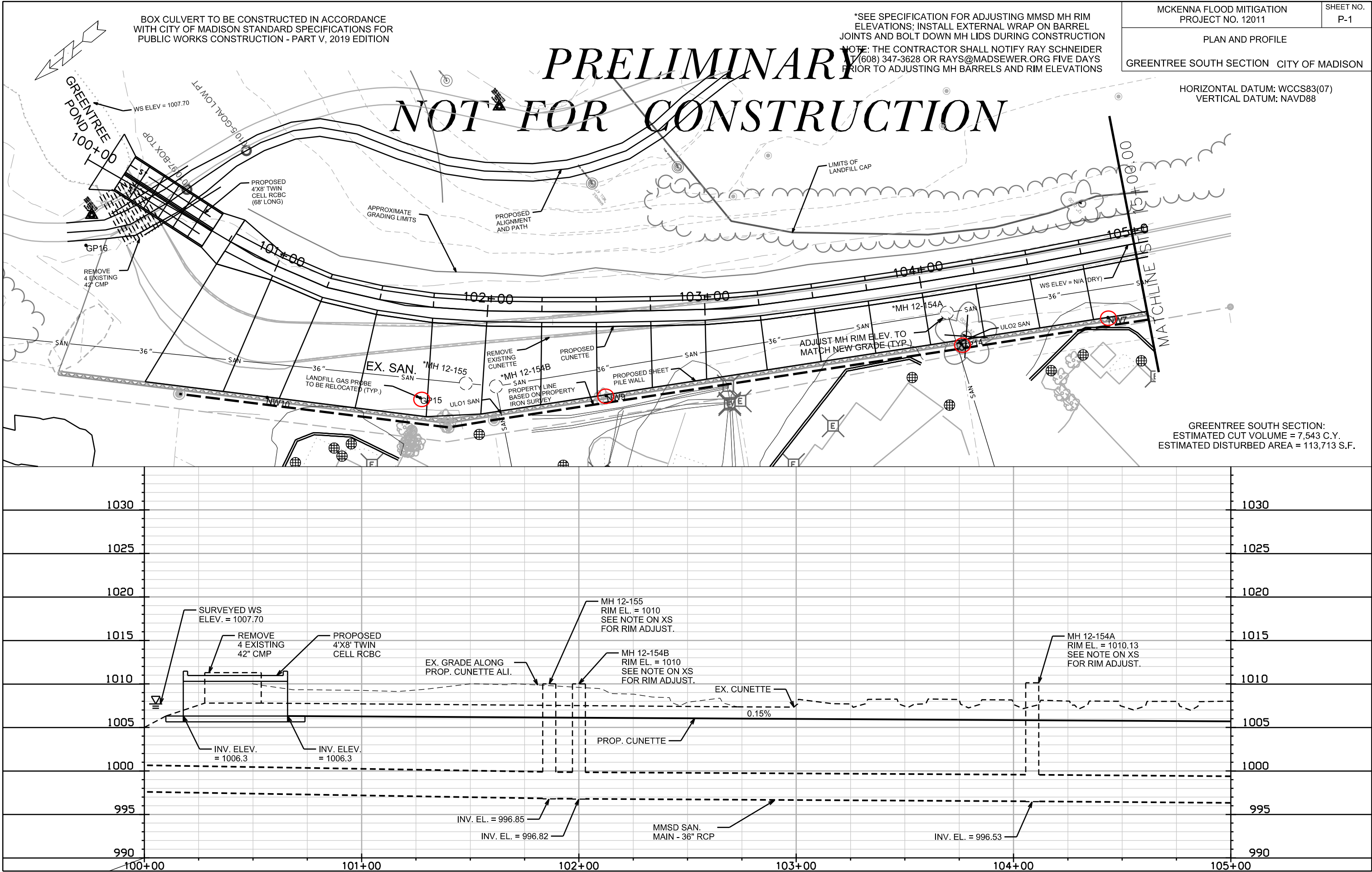
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ORIGINATOR: CITY OF MADISON, STREETS DIVISION

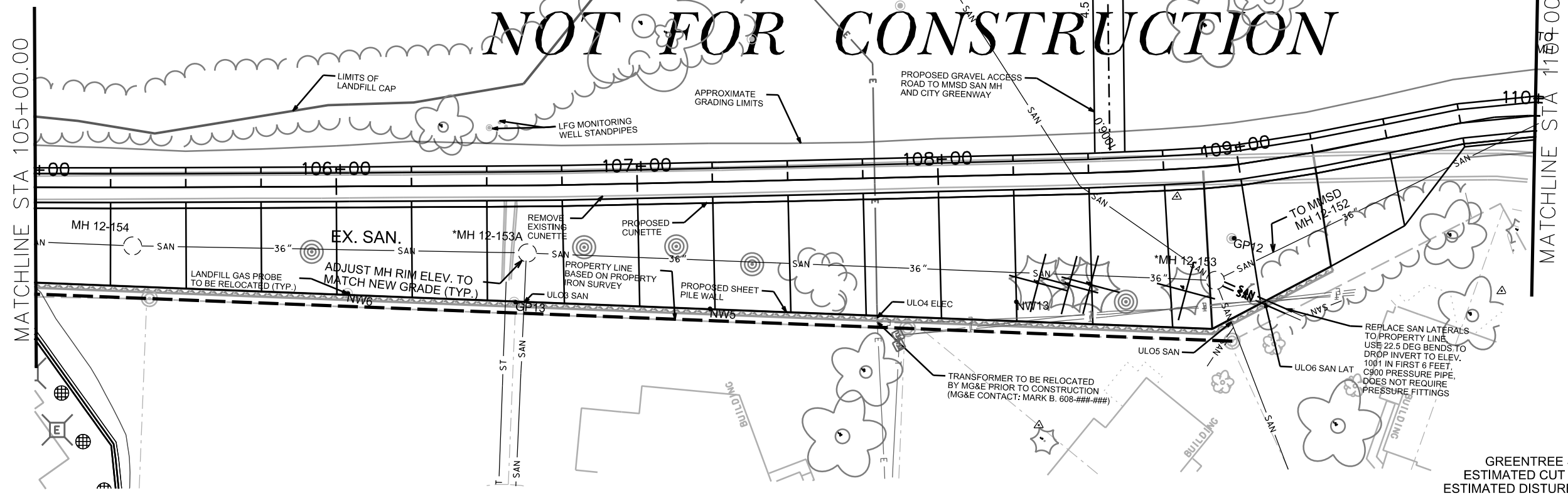




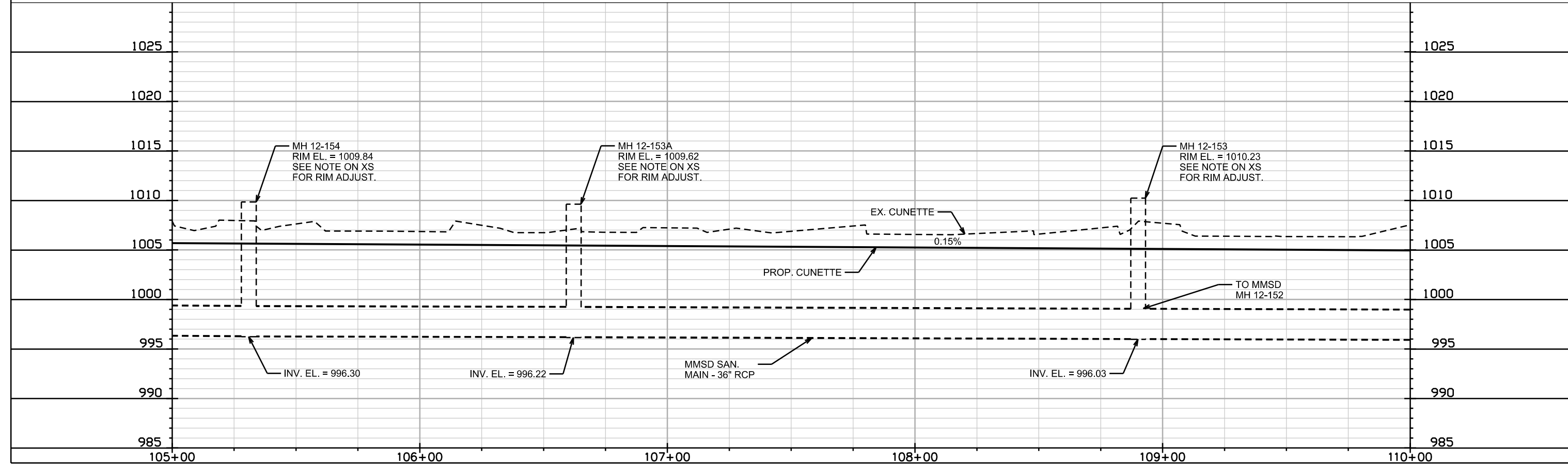
*SEE SPECIFICATION FOR ADJUSTING MMSD MH RIM ELEVATIONS; INSTALL EXTERNAL WRAP ON BARREL JOINTS AND BOLT DOWN MH LIDS DURING CONSTRUCTION
NOTE: THE CONTRACTOR SHALL NOTIFY RAY SCHNEIDER AT (608) 347-3628 OR RAYS@MADSEWER.ORG FIVE DAYS PRIOR TO ADJUSTING MH BARRELS AND RIM ELEVATIONS

HORIZONTAL DATUM: WCCS83(07)
VERTICAL DATUM: NAVD88

PRELIMINARY
NOT FOR CONSTRUCTION



GREENTREE SOUTH SECTION:
ESTIMATED CUT VOLUME = 7,543 C.Y.
ESTIMATED DISTURBED AREA = 113,713 S.F.



BOX CULVERT TO BE CONSTRUCTED IN ACCORDANCE
WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION - PART V, 2019 EDITION

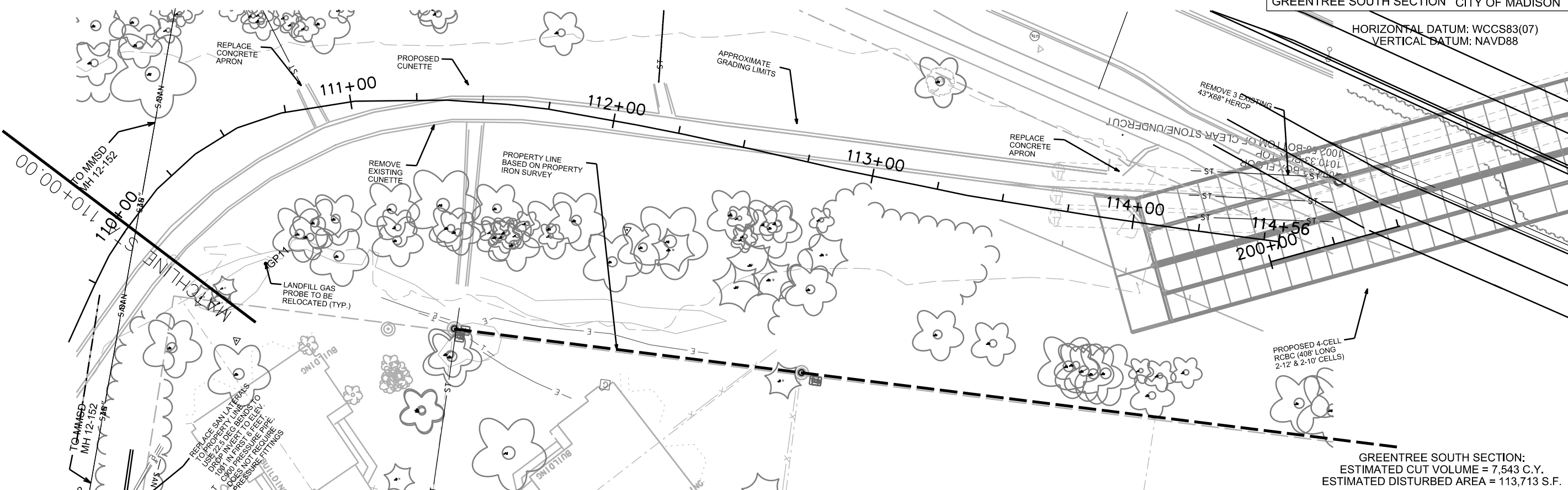
MCKENNA FLOOD MITIGATION
PROJECT NO. 12011

SHEET NO.
P-3

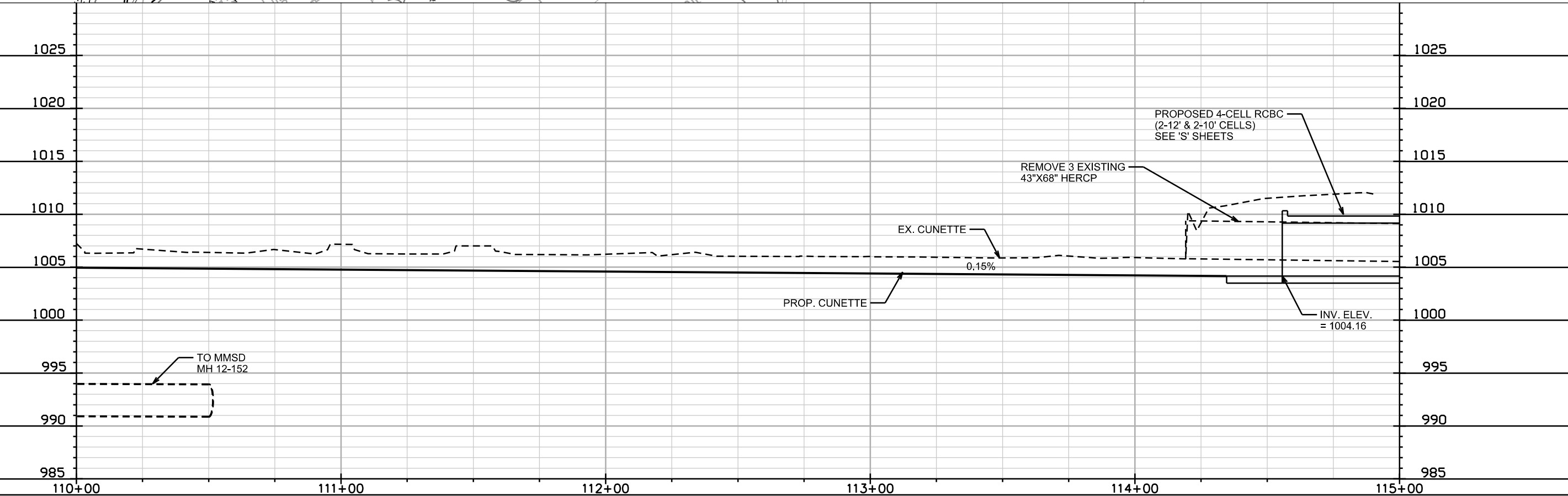
PLAN AND PROFILE

GREENTREE SOUTH SECTION CITY OF MADISON

HORIZONTAL DATUM: WCCS83(07)
VERTICAL DATUM: NAVD88



GREENTREE SOUTH SECTION:
ESTIMATED CUT VOLUME = 7,543 C.Y.
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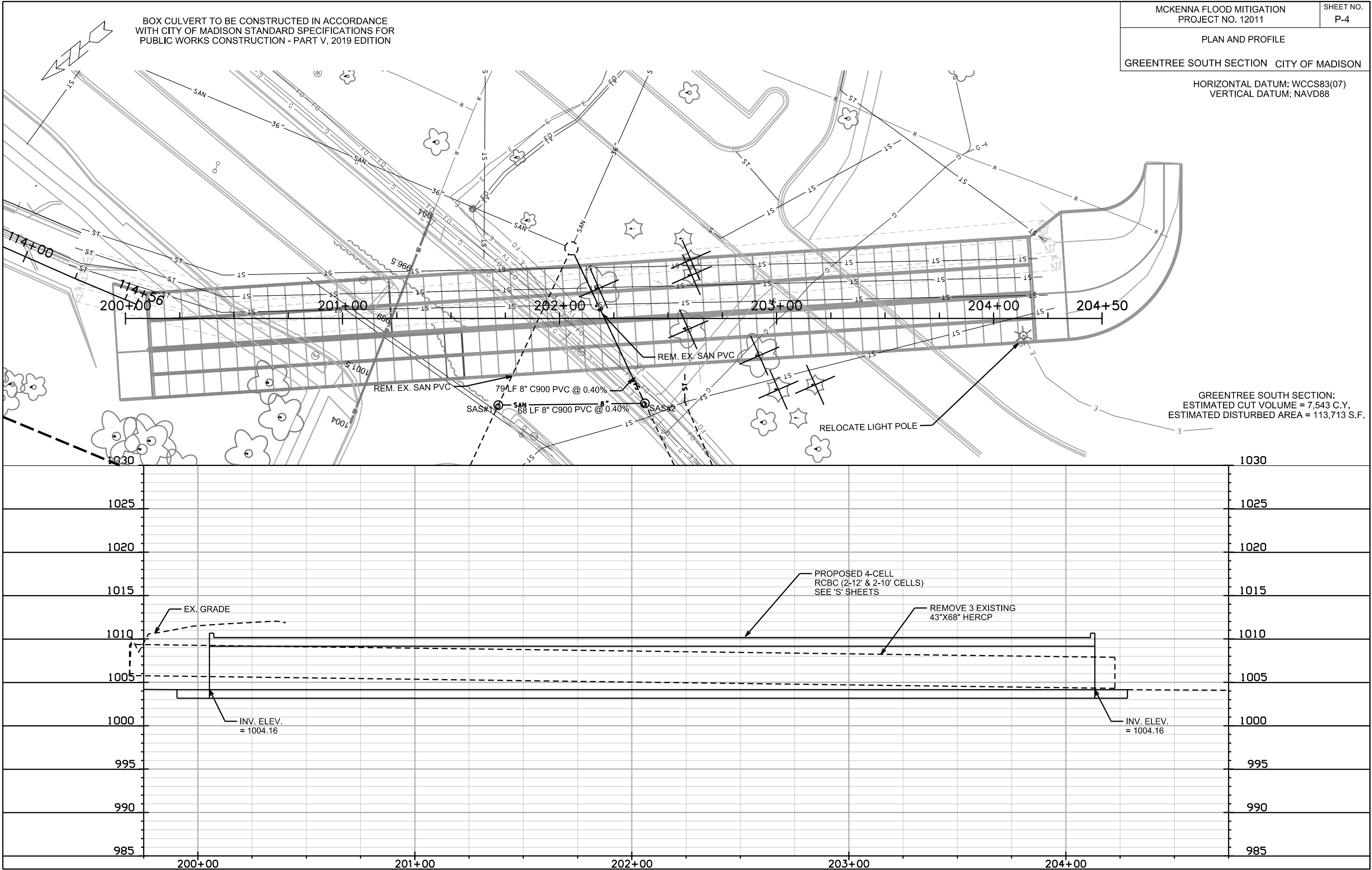


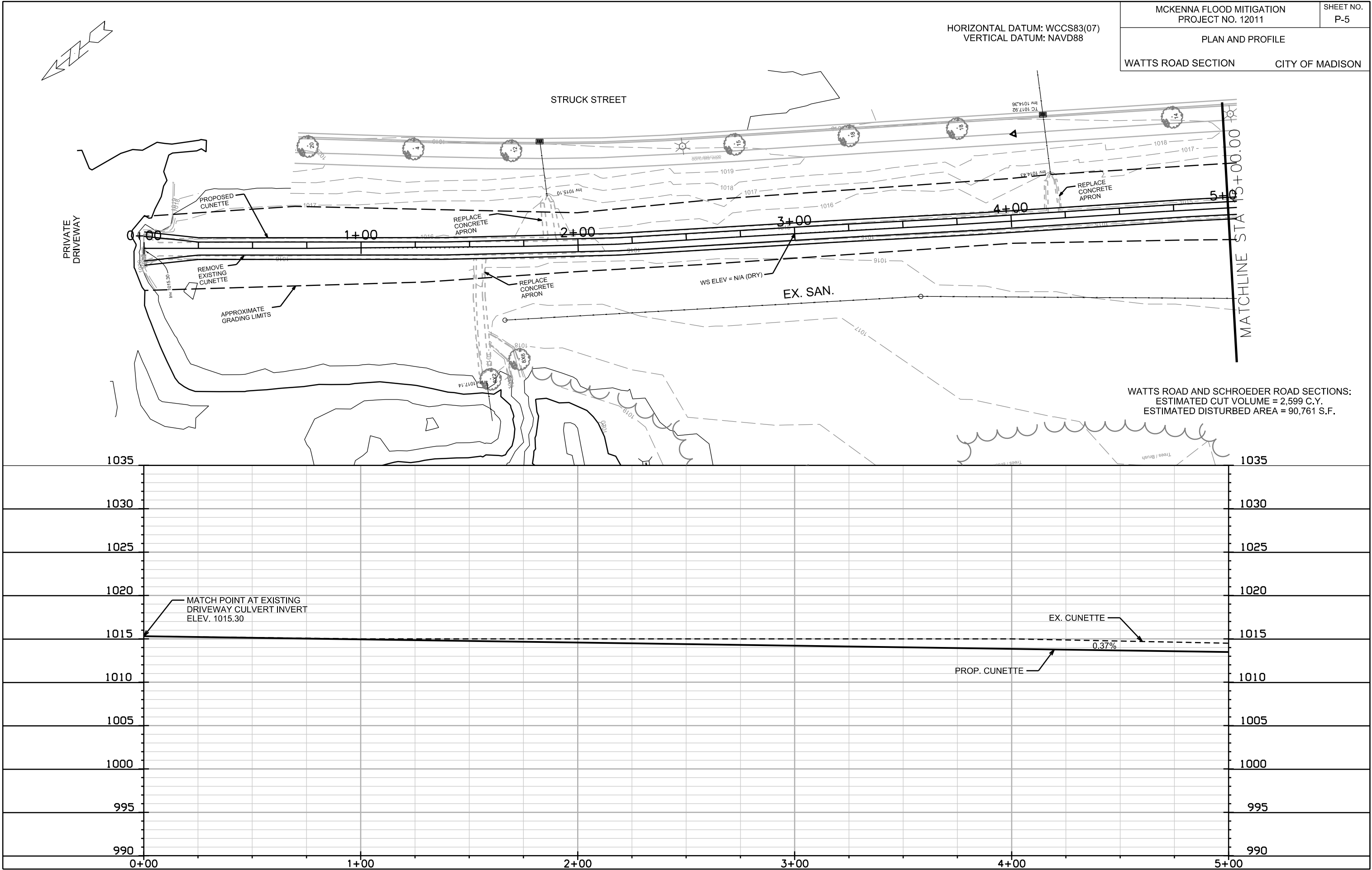
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PLOT NAME: _____

REV. DATE: _____

ORIGINATOR: CITY OF MADISON, STREETS DIVISION





BOX CULVERT TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - PART V, 2019 EDITION

MCKENNA FLOOD MITIGATION
PROJECT NO. 12011

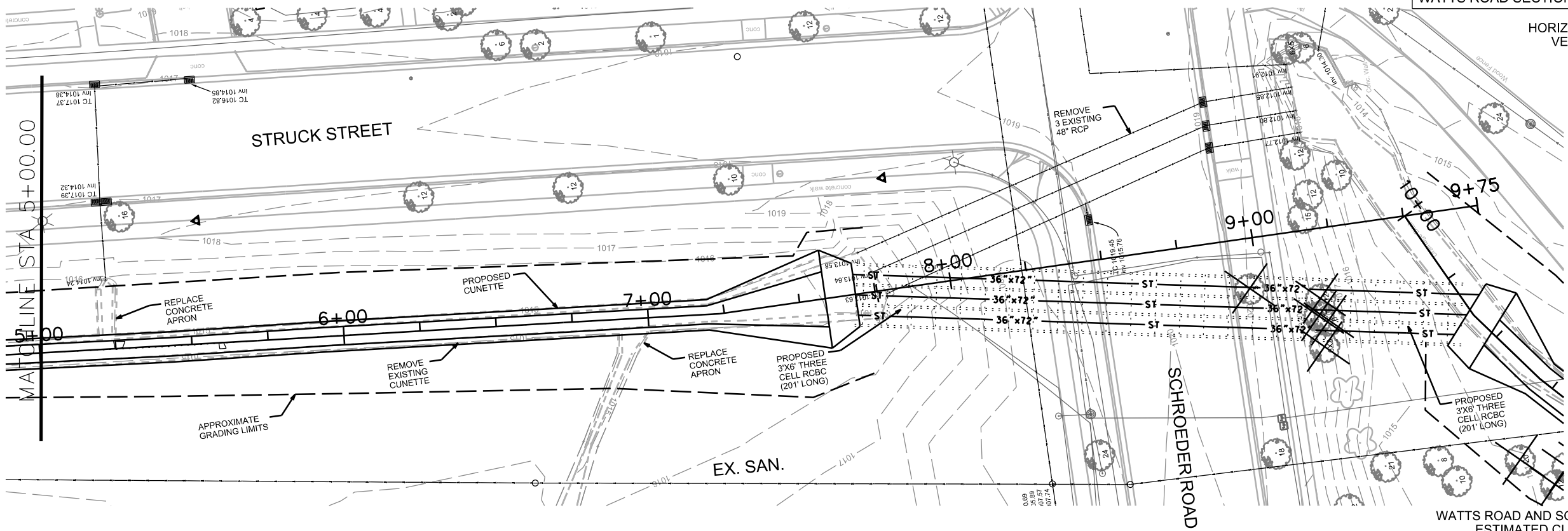
SHEET NO.
P-6

PLAN AND PROFILE

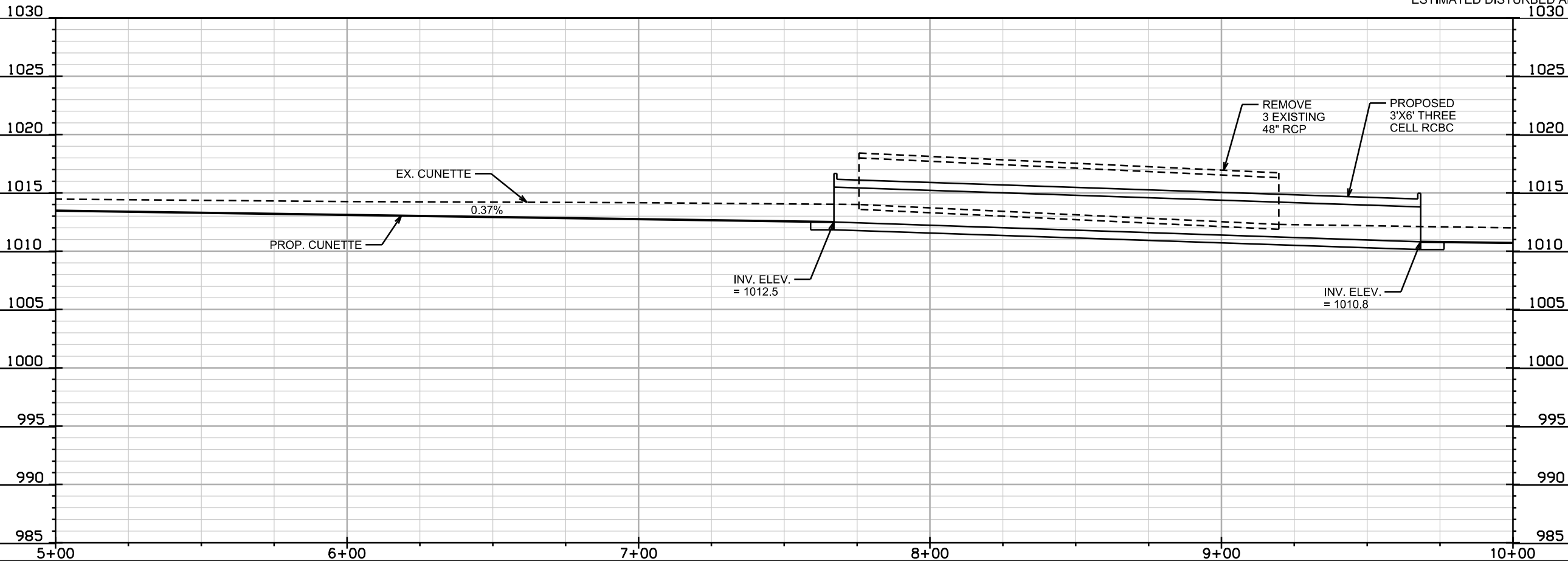
WATTS ROAD SECTION

CITY OF MADISON

HORIZONTAL DATUM: WCCS83(07)
VERTICAL DATUM: NAVD88



WATTS ROAD AND SCHROEDER ROAD SECTIONS:
ESTIMATED CUT VOLUME = 2,599 C.Y.
ESTIMATED DISTURBED AREA = 90,761 S.F.

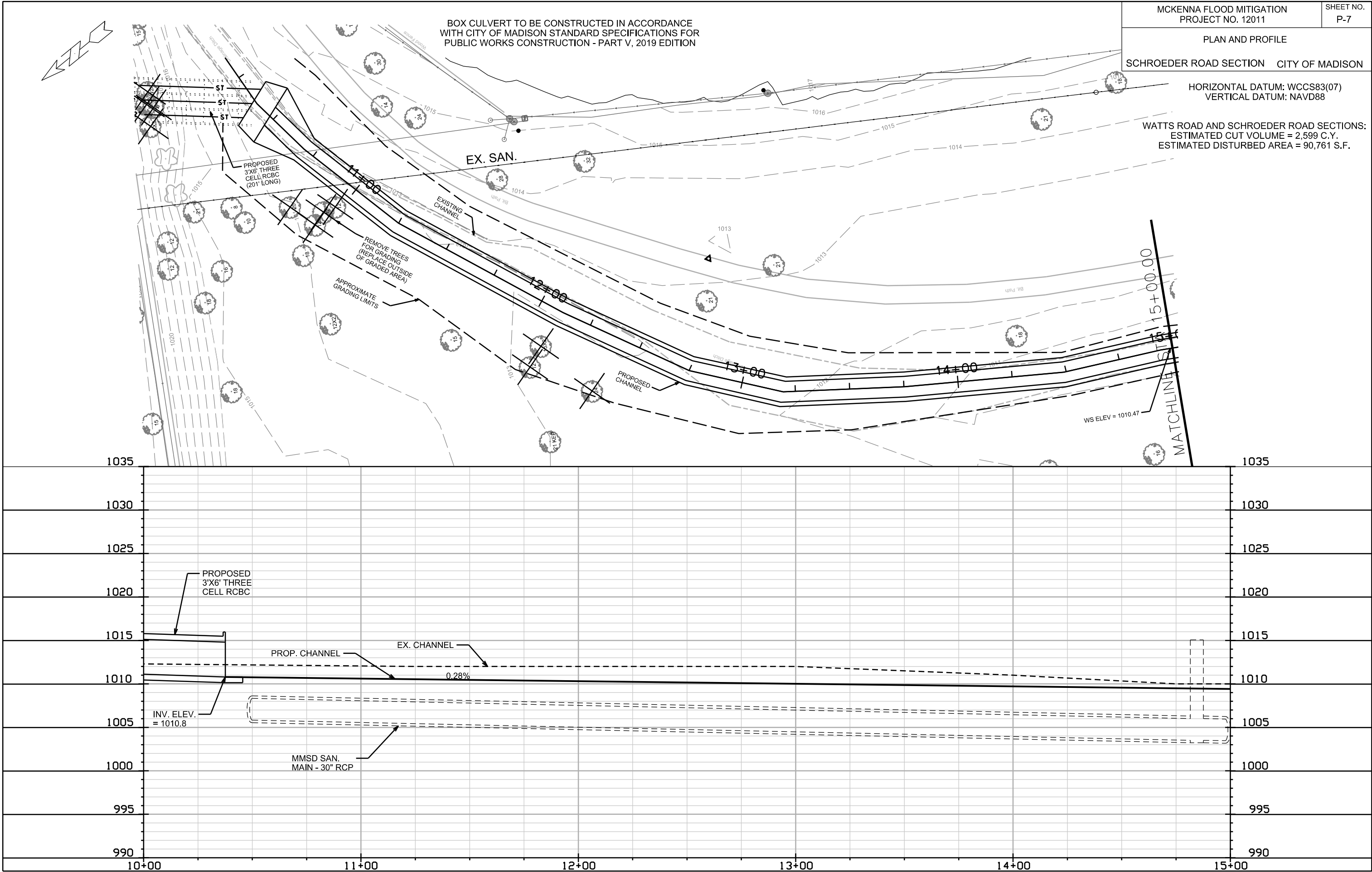


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PLOT NAME: _____

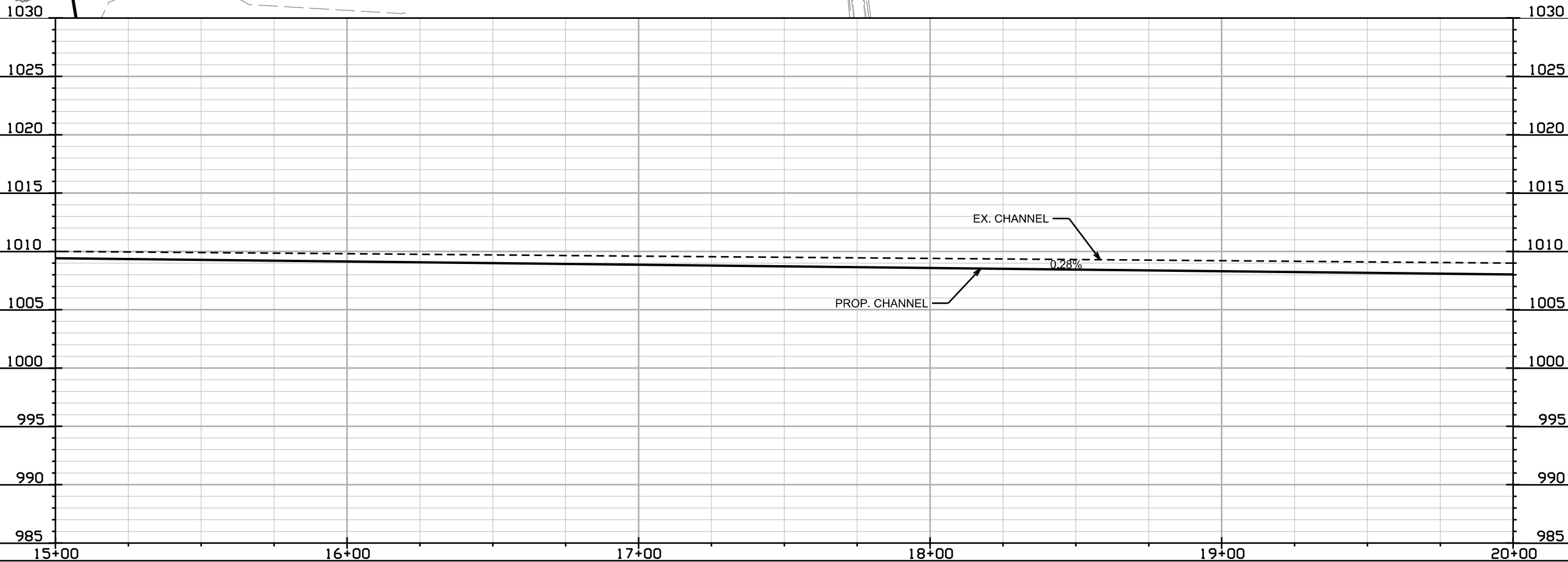
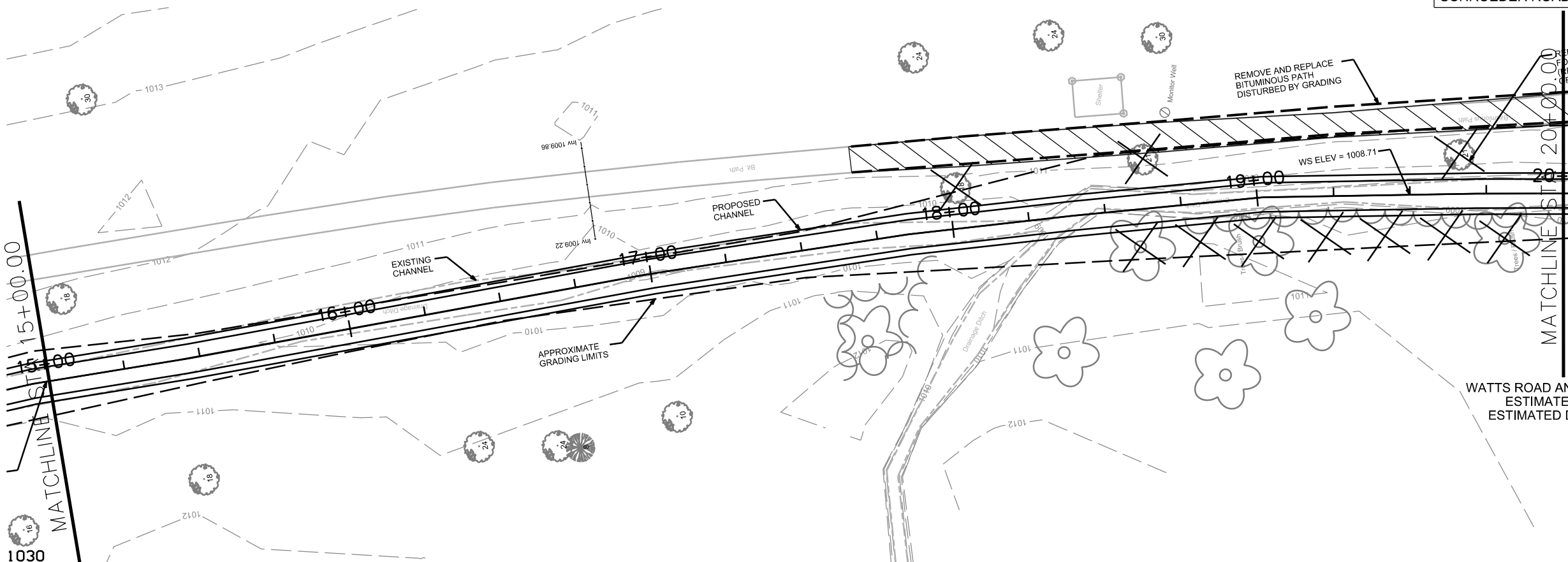
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ORIGINATOR: CITY OF MADISON, STREETS DIVISION



HORIZONTAL DATUM: WCCS83(07)
VERTICAL DATUM: NAVD88

WATTS ROAD AND SCHROEDER ROAD SECTIONS:
ESTIMATED CUT VOLUME = 2,599 C.Y.
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PLOT SCALE: _____

PLOT NAME: _____

REV. DATE: _____

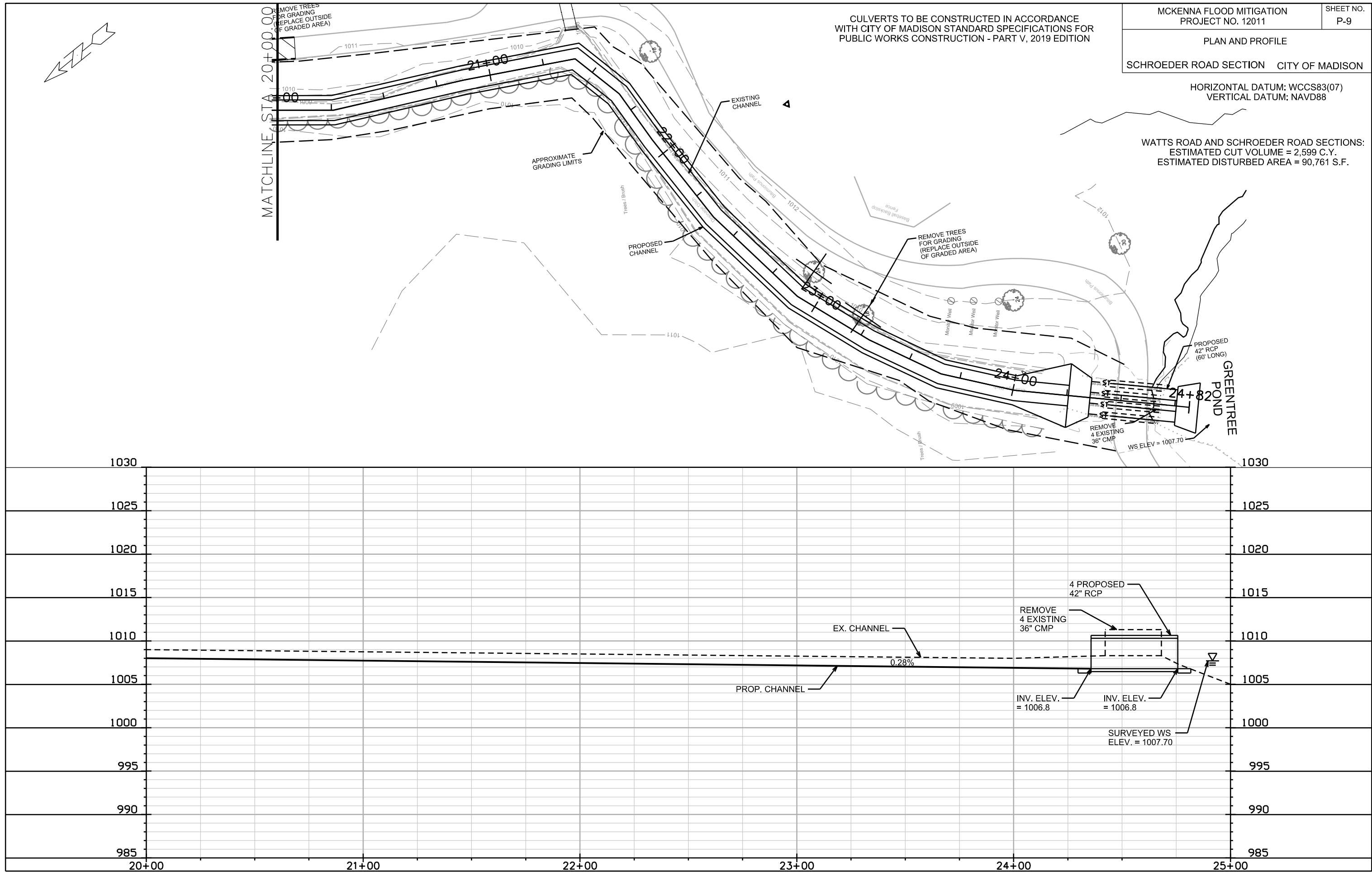
ORIGINATOR: CITY OF MADISON, STREETS DIVISION

PLOT SCALE: _____

PLOT NAME: _____

REV. DATE: _____

ORIGINATOR: CITY OF MADISON, STREETS DIVISION



CULVERTS TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - PART V, 2019 EDITION

MCKENNA FLOOD MITIGATION PROJECT NO. 12011	SHEET NO. P-9
PLAN AND PROFILE	
SCHROEDER ROAD SECTION CITY OF MADISON	

HORIZONTAL DATUM: WCCS83(07)
VERTICAL DATUM: NAVD88

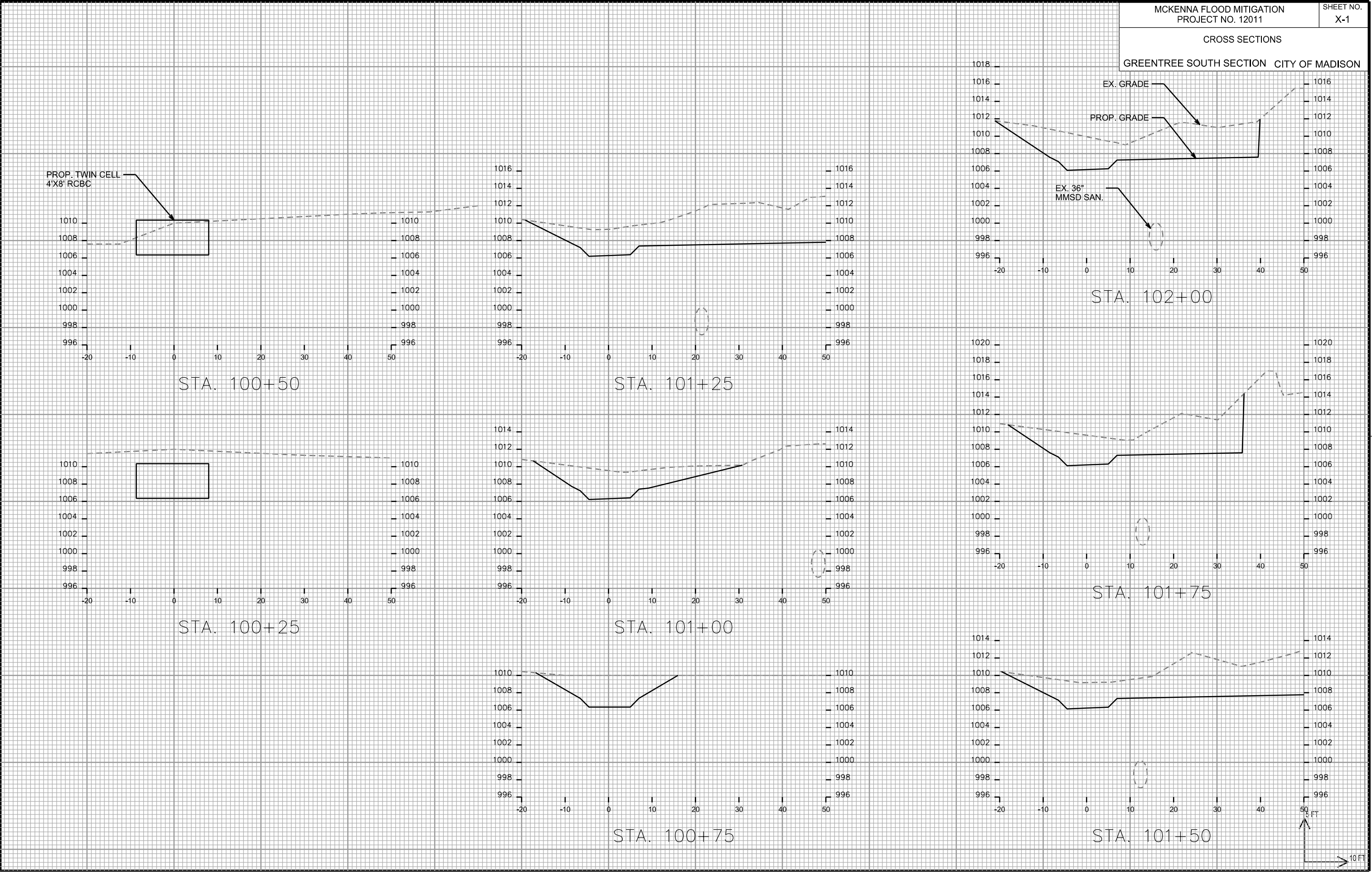
WATTS ROAD AND SCHROEDER ROAD SECTIONS:
ESTIMATED CUT VOLUME = 2,599 C.Y.
ESTIMATED DISTURBED AREA = 90,761 S.F.

PLOT SCALE: _____

PLOT NAME: _____

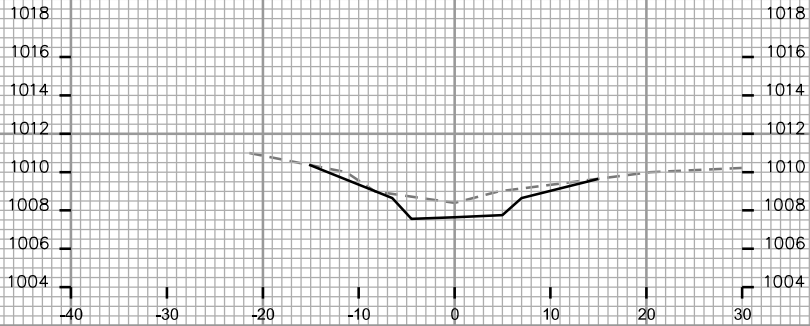
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ORIGINATOR: CITY OF MADISON, STREETS DIVISION

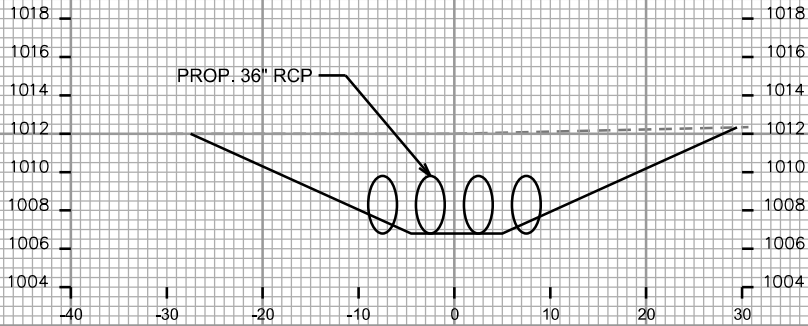


CROSS SECTIONS

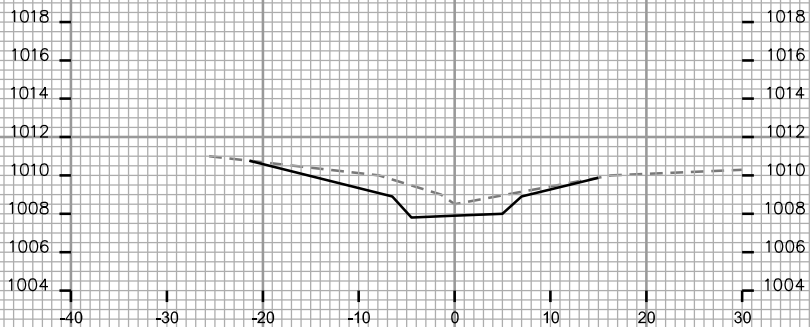
SCHROEDER ROAD SECTION CITY OF MADISON



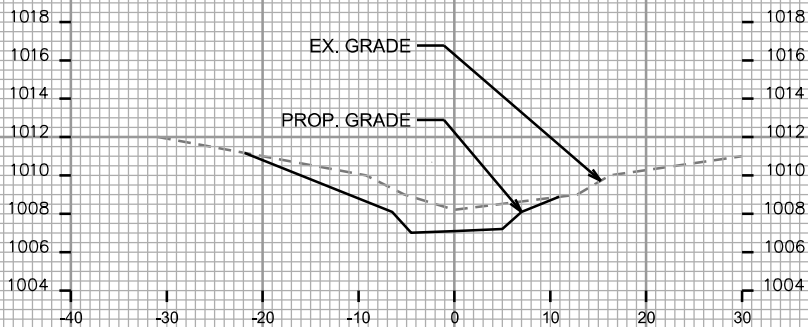
STA. 21+50



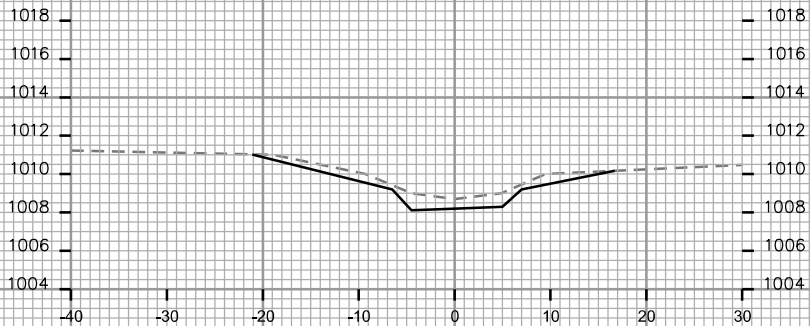
STA. 24+50



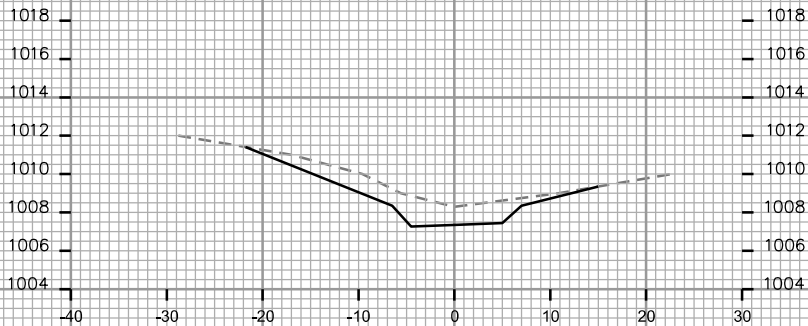
STA. 20+50



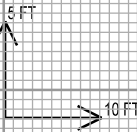
STA. 23+50



STA. 19+50



STA. 22+50



PLOT SCALE: _____

PLOT NAME: _____

REV. DATE: _____

ORIGINATOR: CITY OF MADISON, STREETS DIVISION

PLOT SCALE: _____

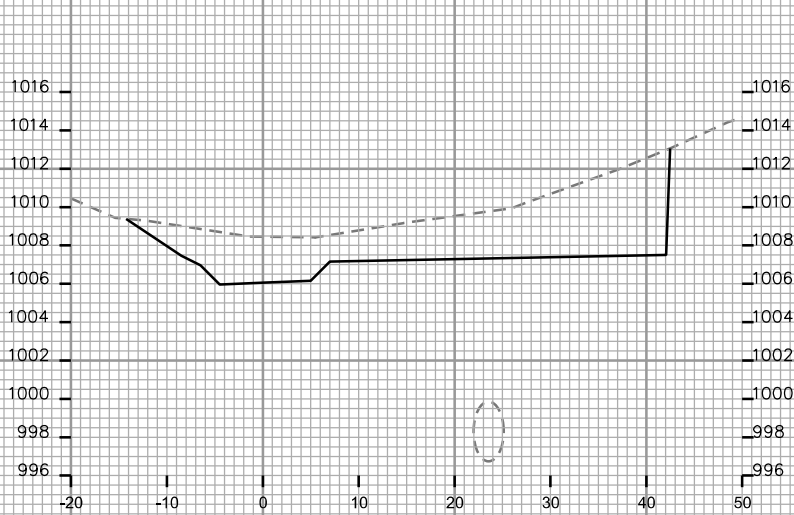
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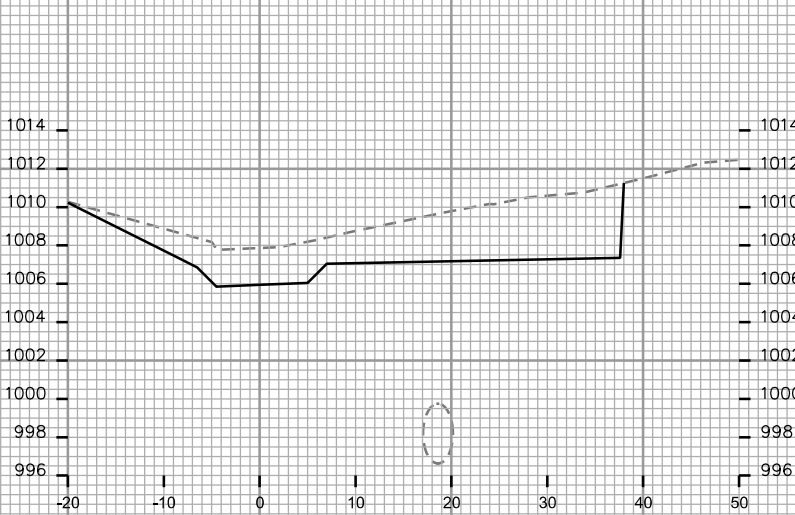
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CROSS SECTIONS

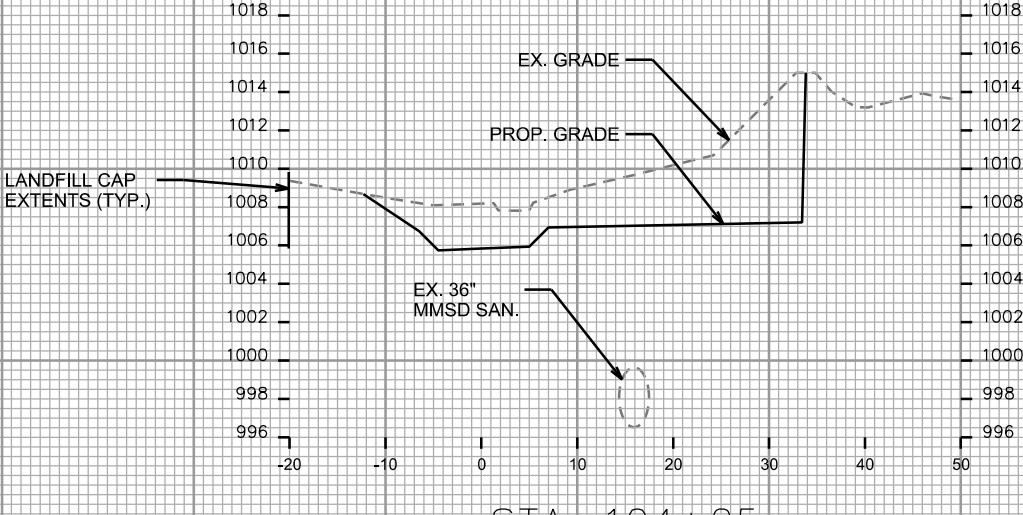
GREENTREE SOUTH SECTION CITY OF MADISON



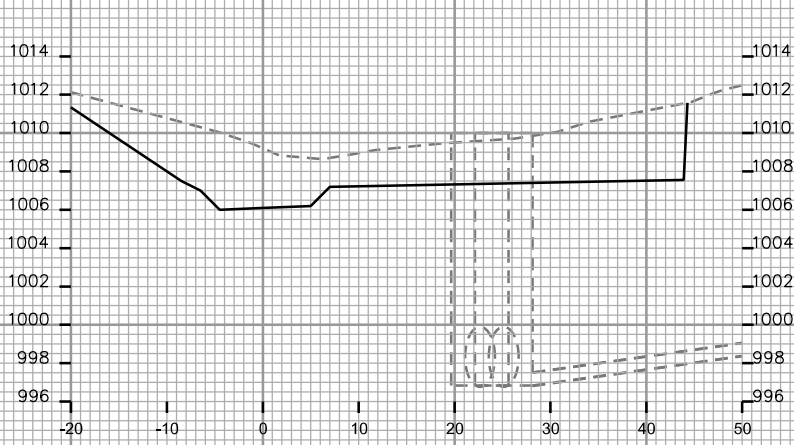
STA. 102+75



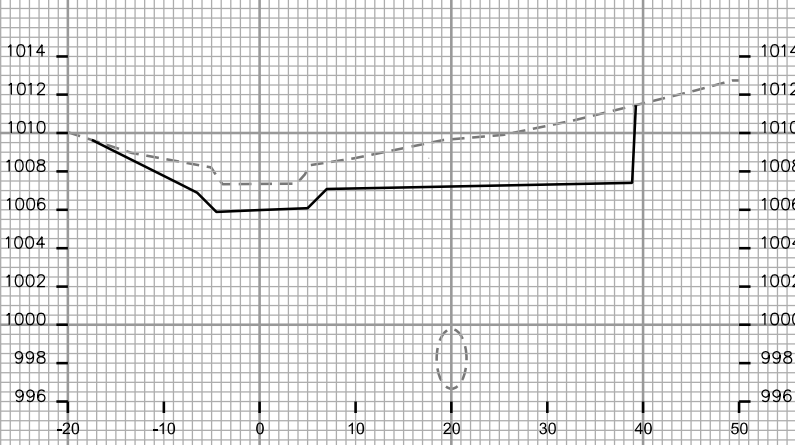
STA. 103+50



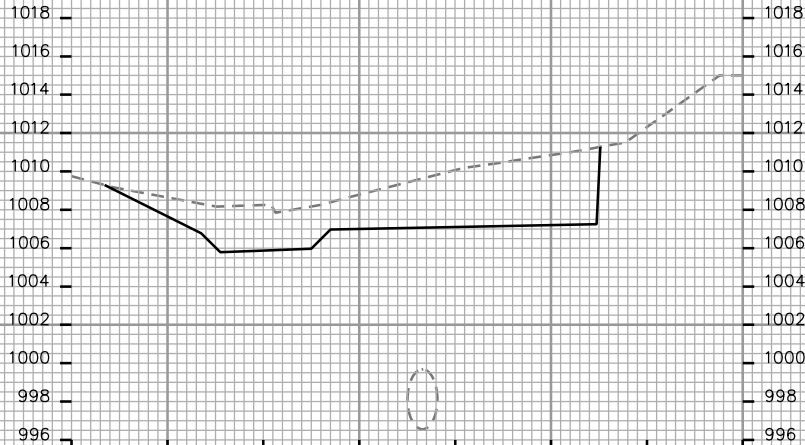
STA. 104+25



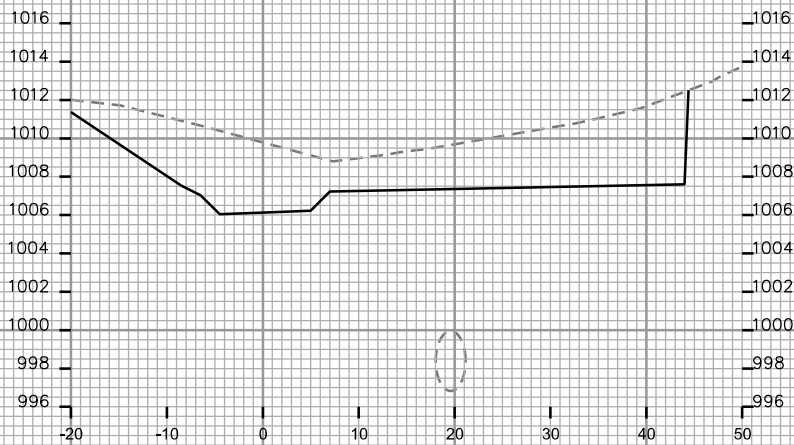
STA. 102+50



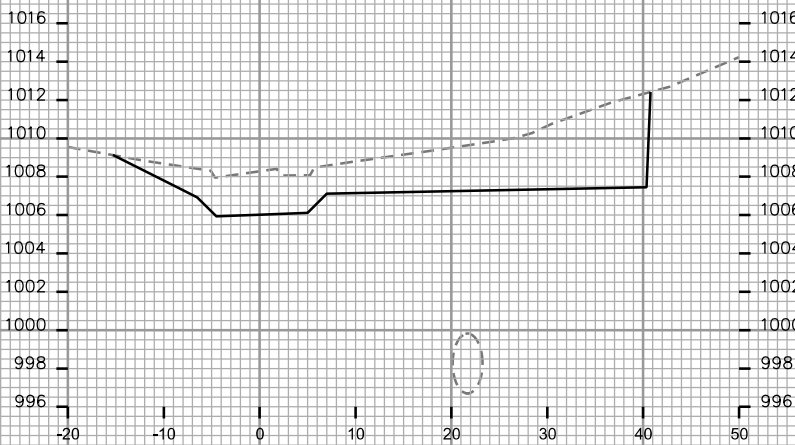
STA. 103+25



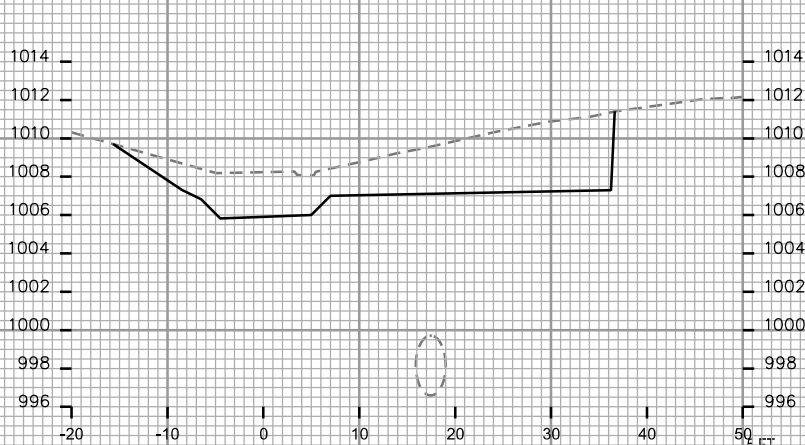
STA. 104+00



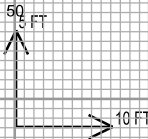
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STA. 103+00



STA. 103+75



PLOT SCALE: _____

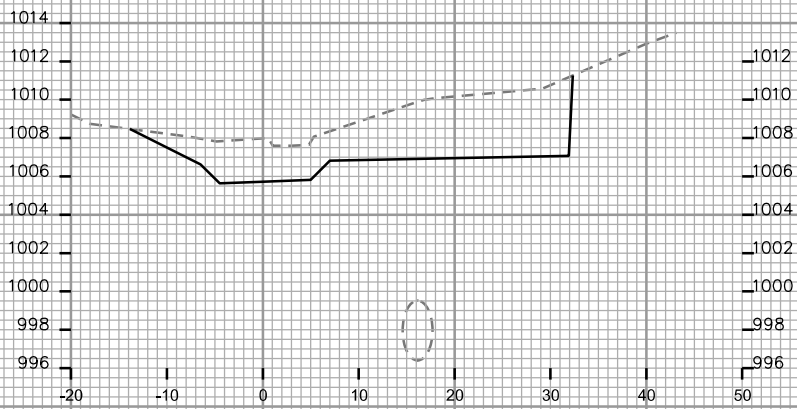
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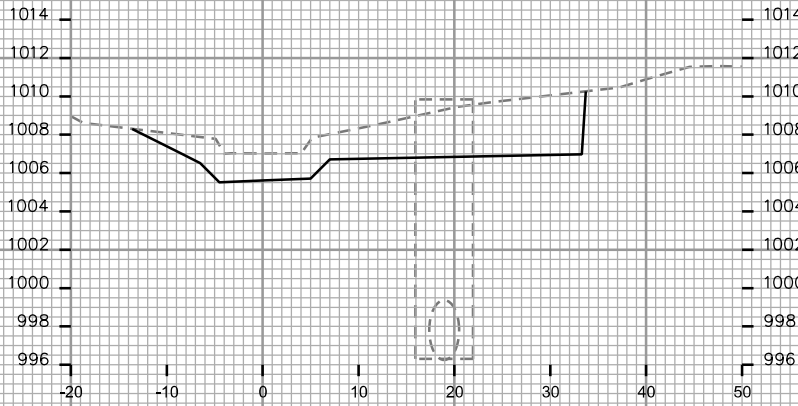
ORIGINATOR: CITY OF MADISON, STREETS DIVISION

CROSS SECTIONS

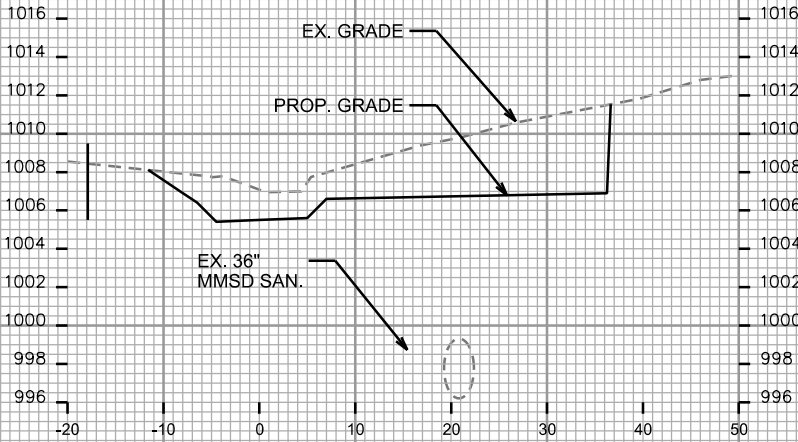
GREENTREE SOUTH SECTION CITY OF MADISON



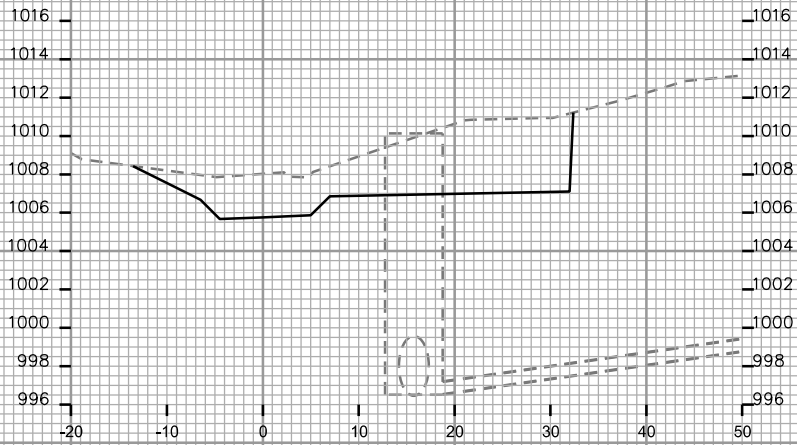
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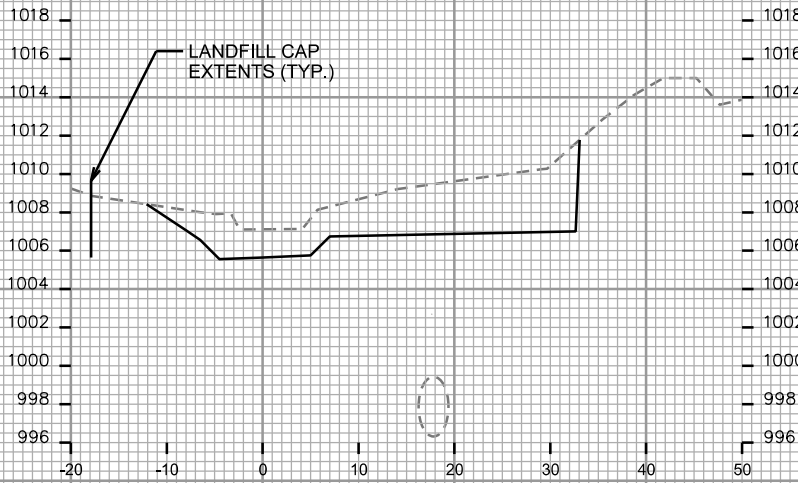
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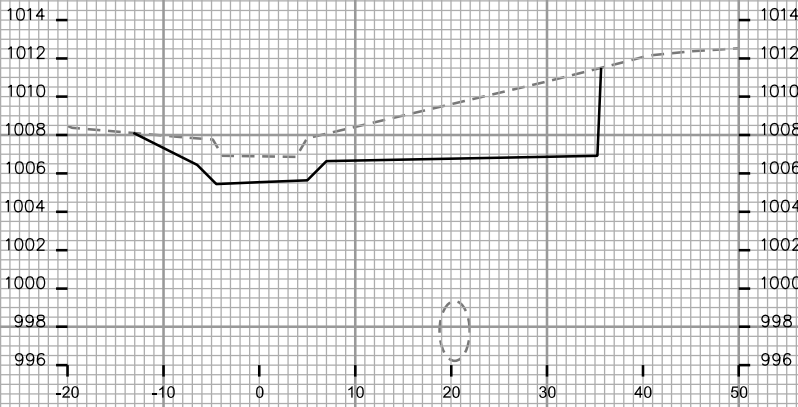
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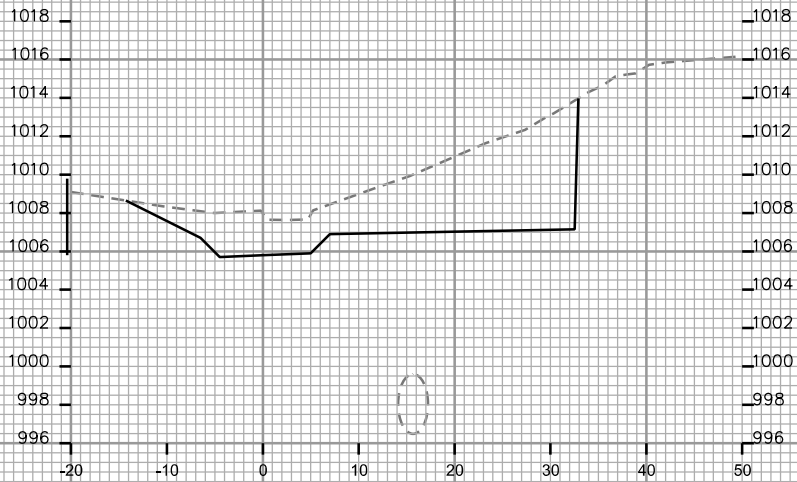
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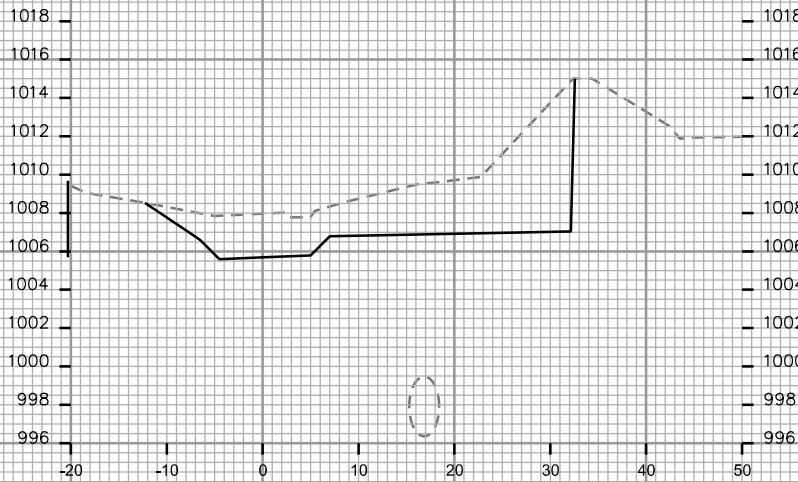
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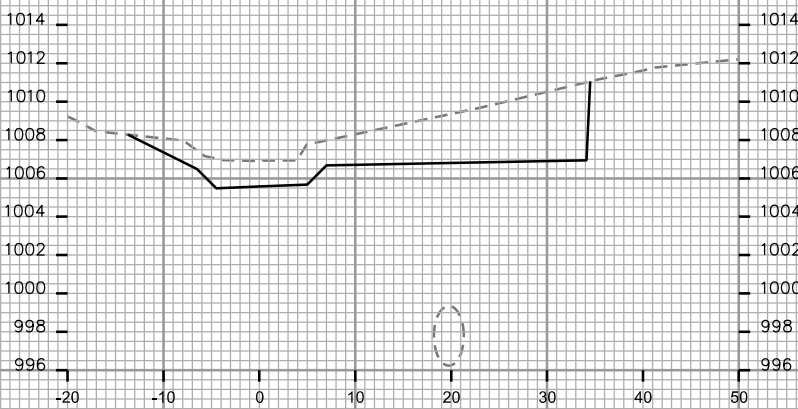
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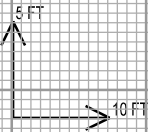
STA. 104+50



STA. 105+25



STA. 106+00



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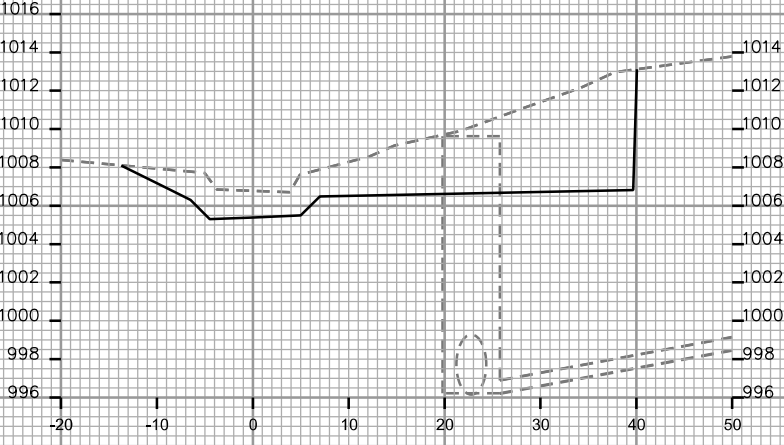
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REV. DATE: _____

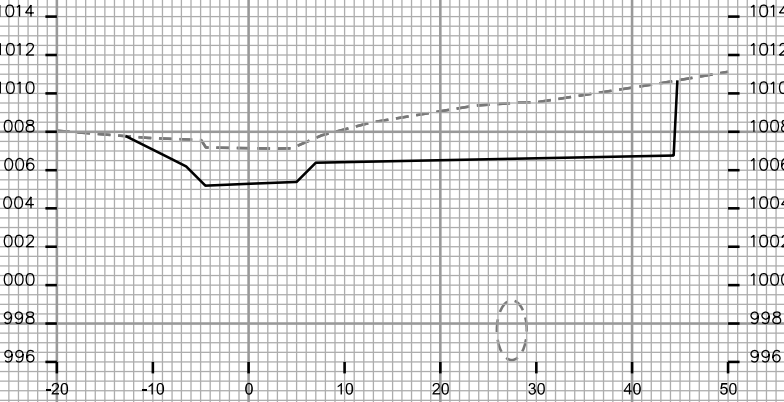
ORIGINATOR: CITY OF MADISON, STREETS DIVISION

CROSS SECTIONS

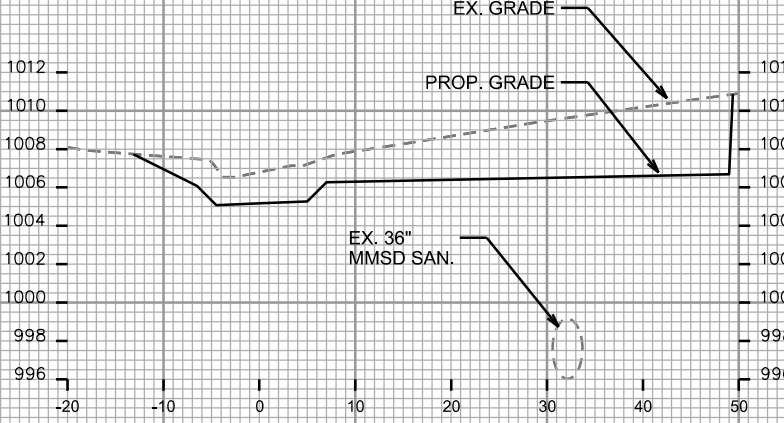
GREENTREE SOUTH SECTION CITY OF MADISON



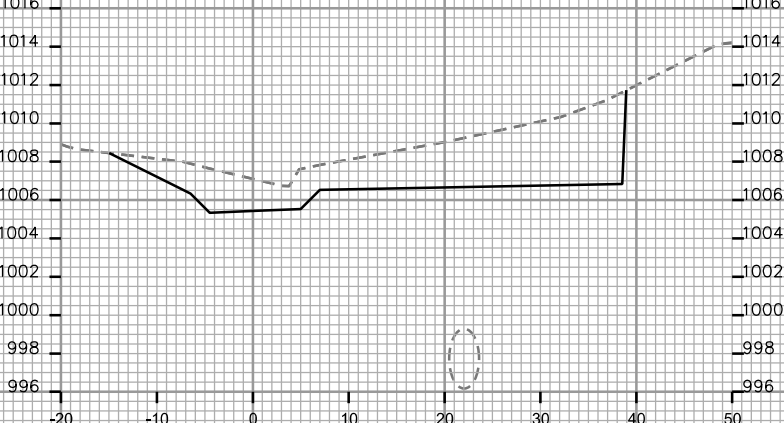
STA. 107+25



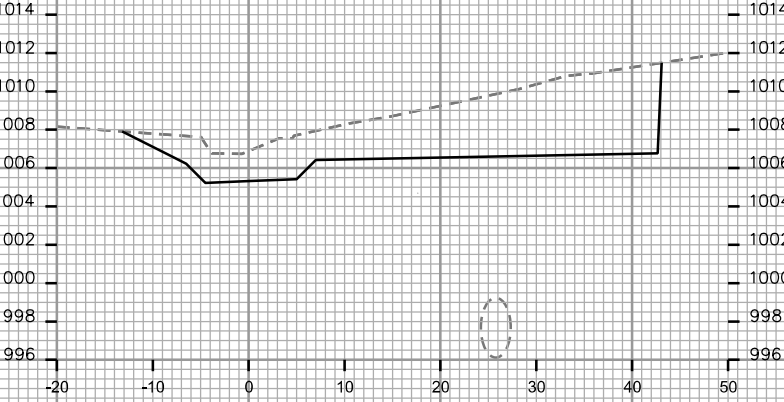
STA. 108+00



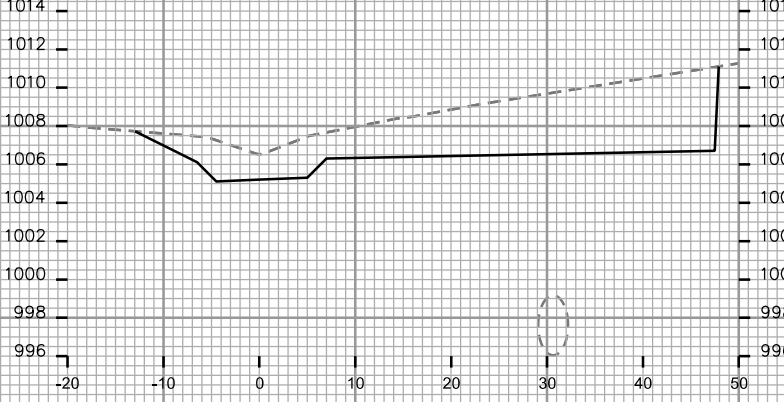
STA. 108+75



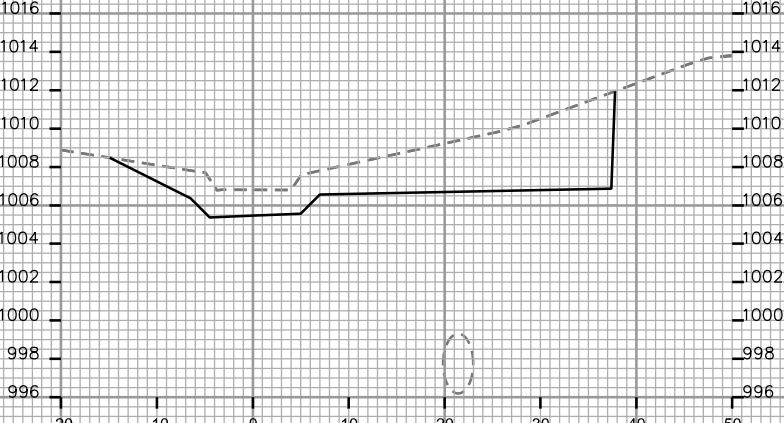
STA. 107+00



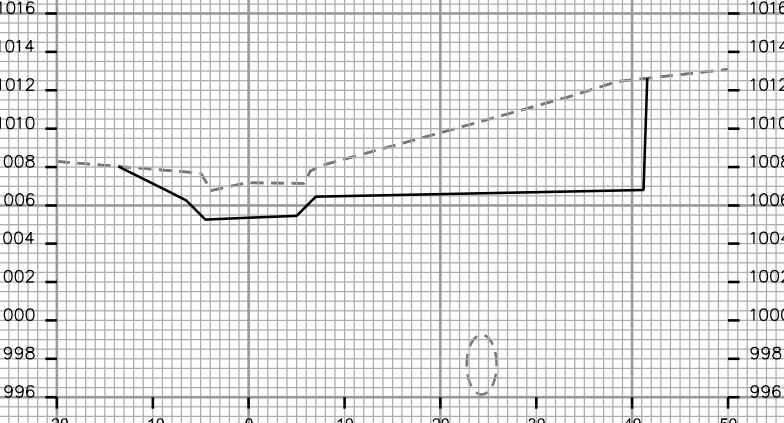
STA. 107+75



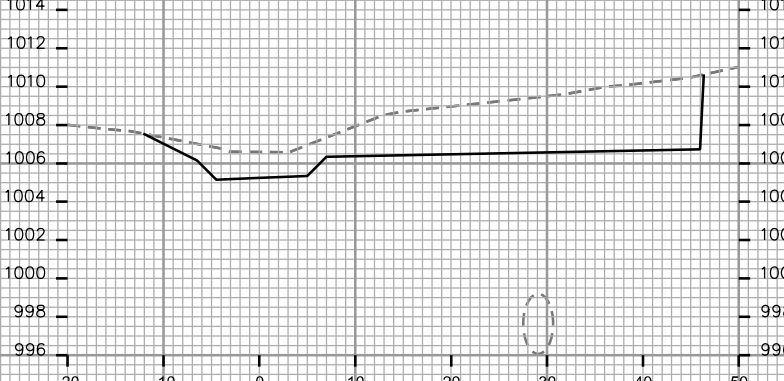
STA. 108+50



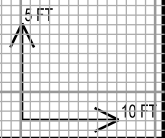
STA. 106+75



STA. 107+50



STA. 108+25



PLOT SCALE: _____

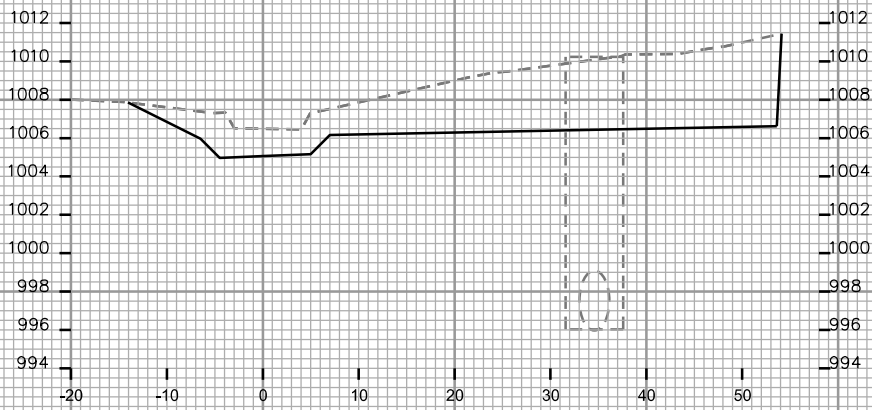
PLOT NAME: _____

REV. DATE: _____

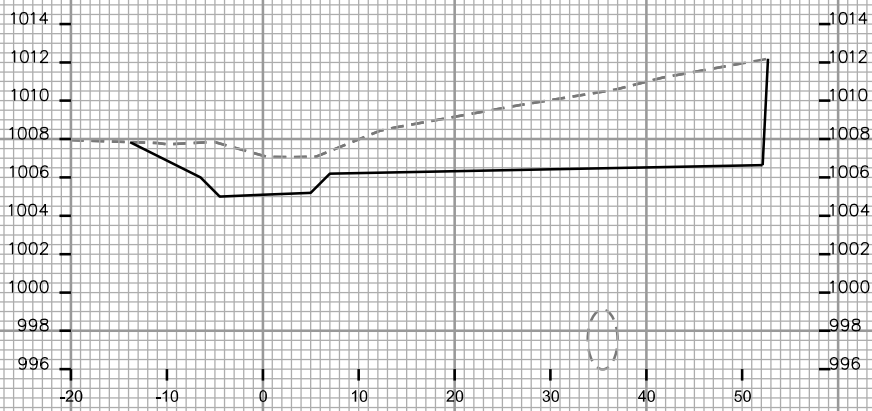
ORIGINATOR: CITY OF MADISON, STREETS DIVISION

CROSS SECTIONS

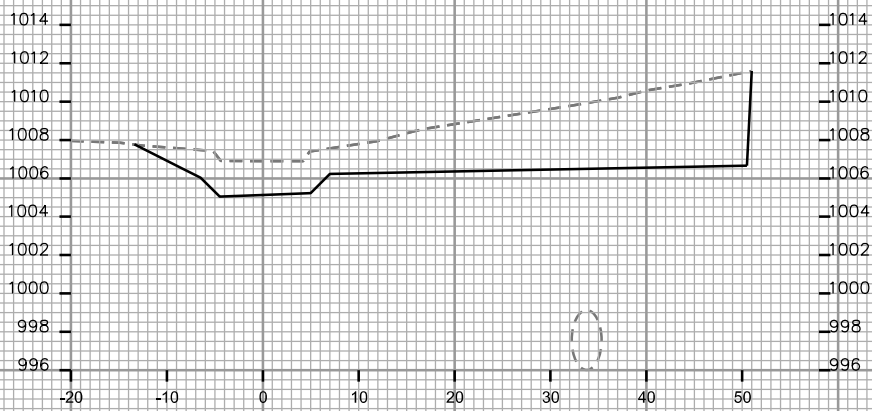
GREENTREE SOUTH SECTION CITY OF MADISON



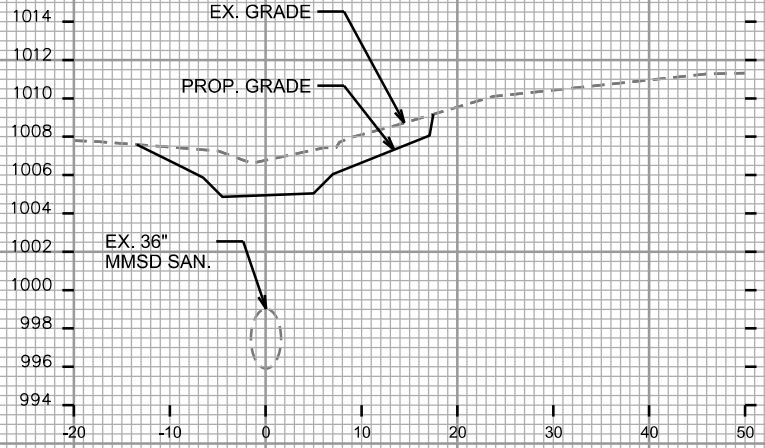
STA. 109+50



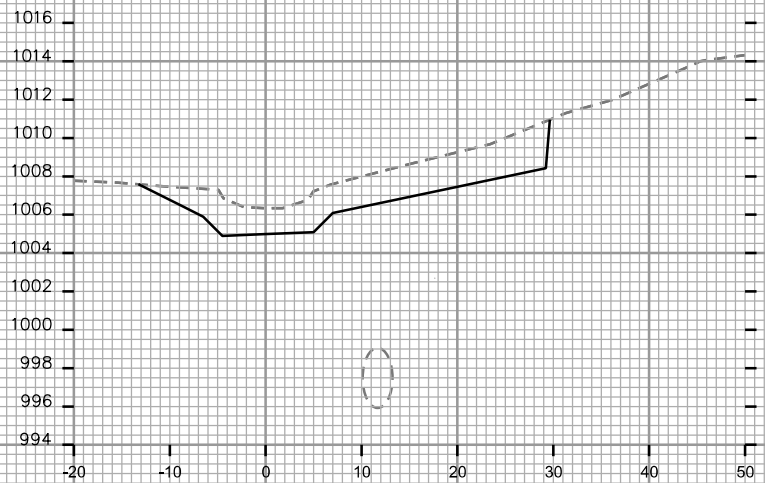
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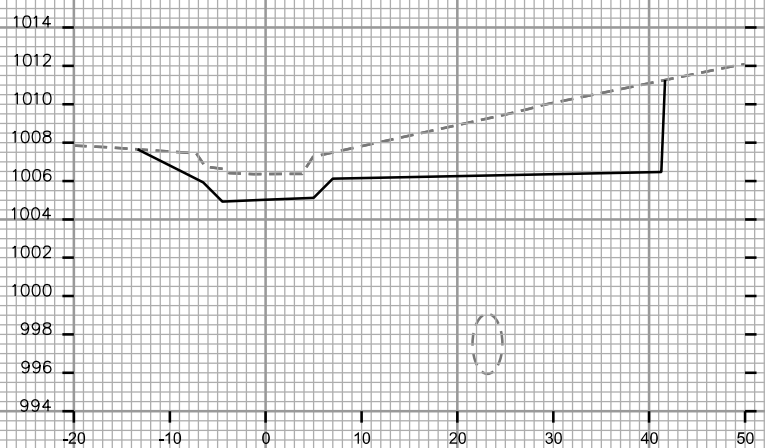
STA. 109+00



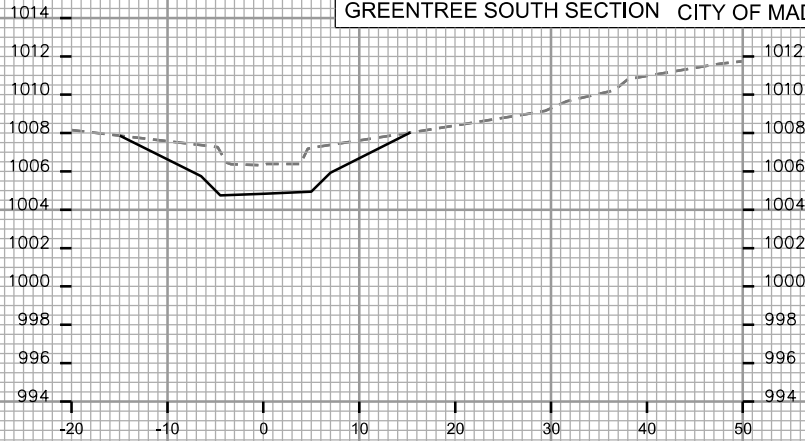
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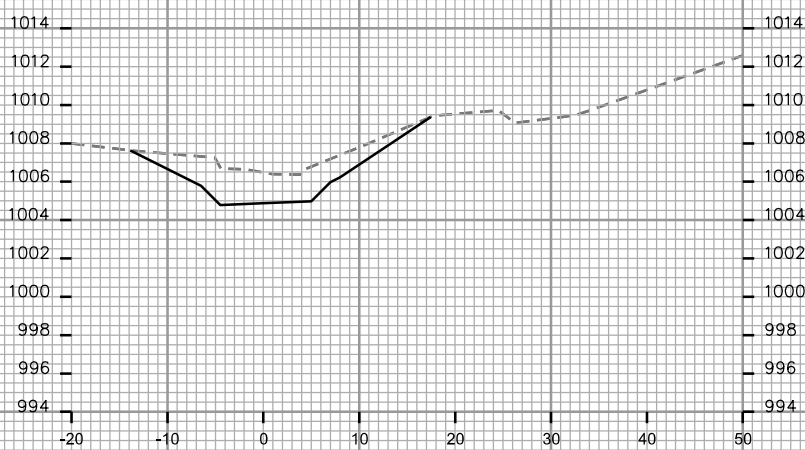
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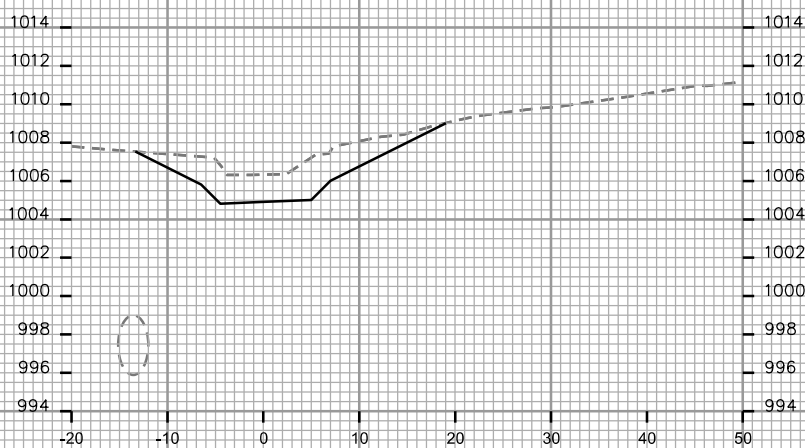
STA. 109+75



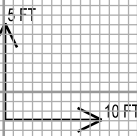
STA. 111+00



STA. 110+75

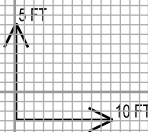
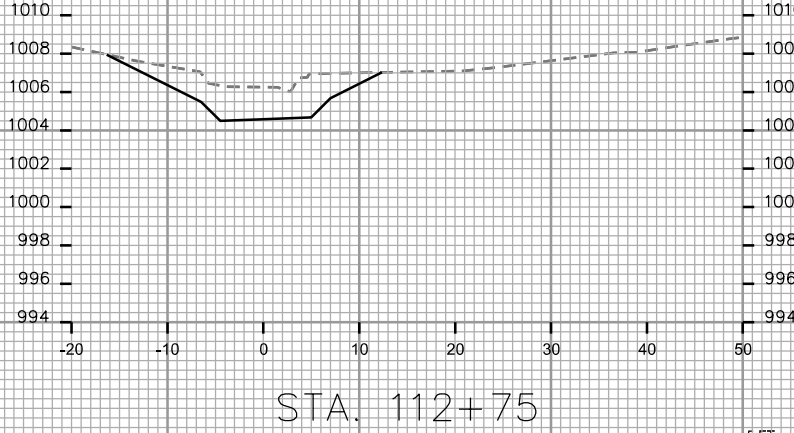
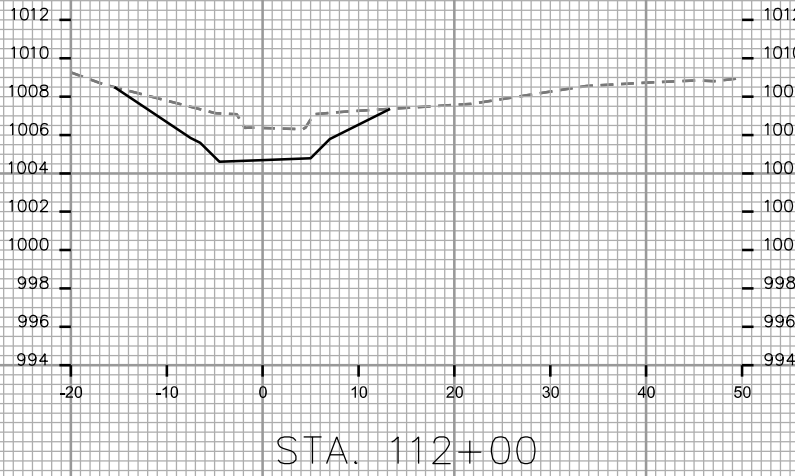
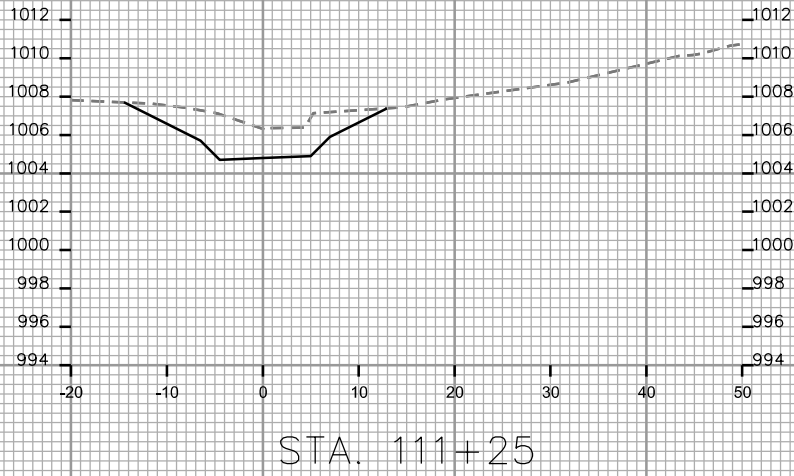
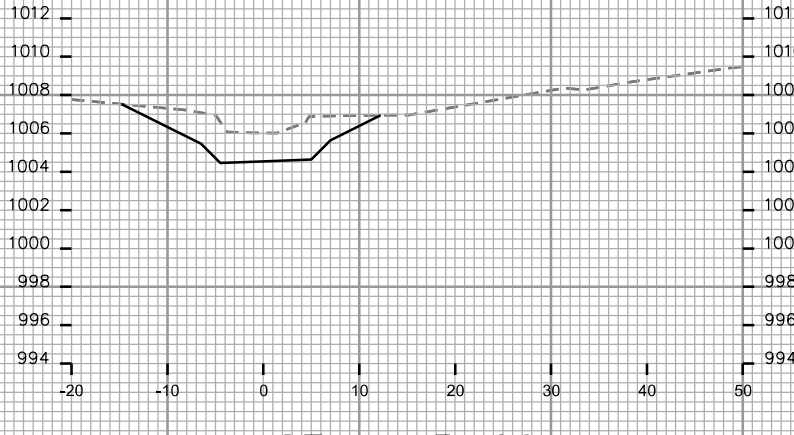
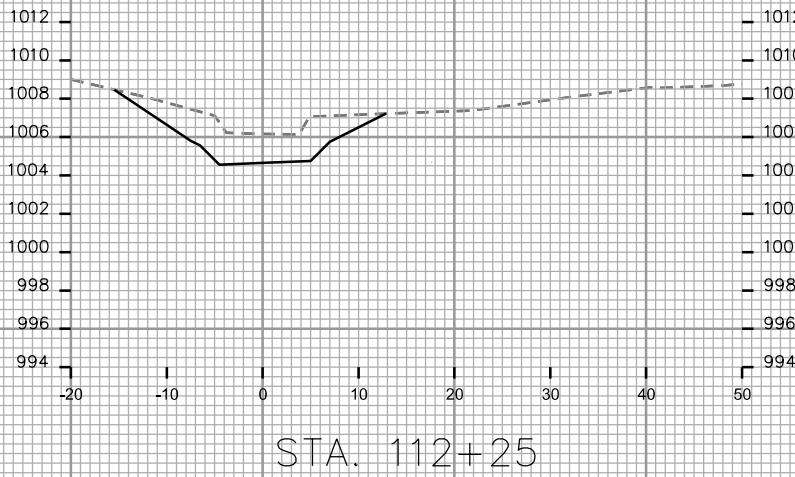
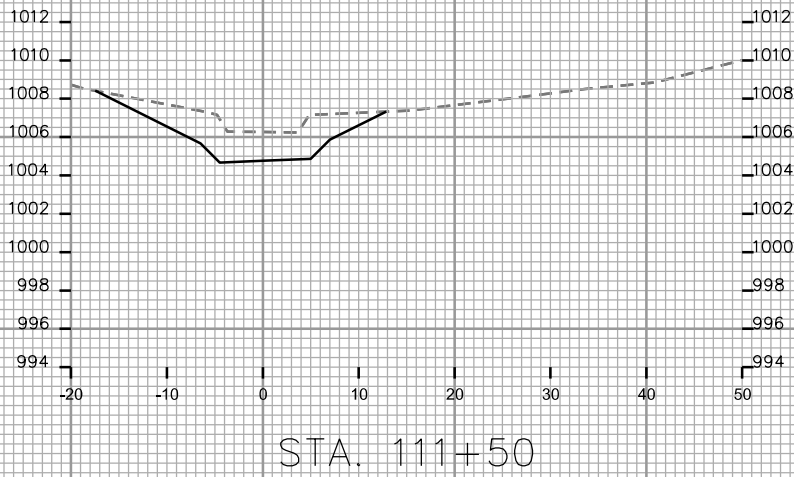
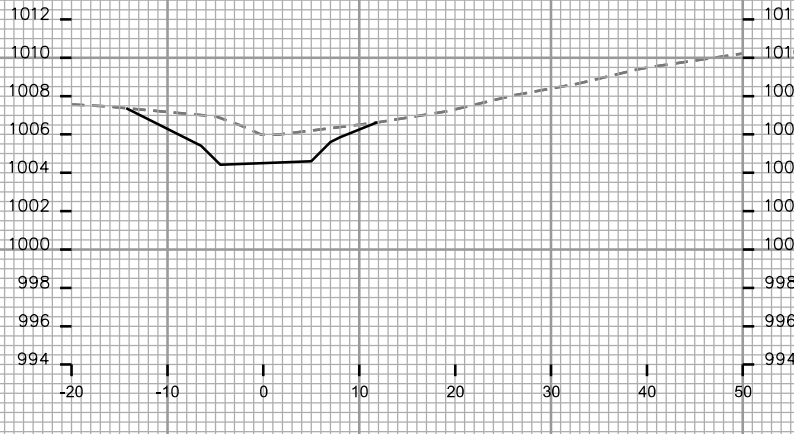
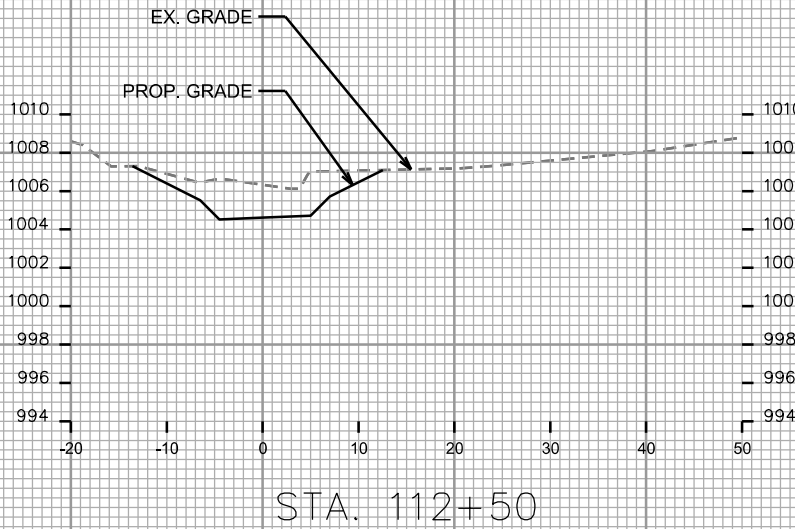
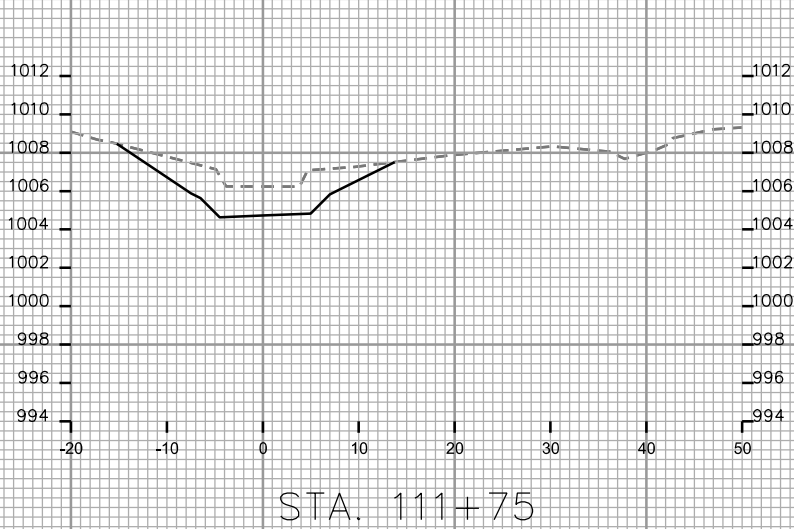


STA. 110+50



CROSS SECTIONS

GREENTREE SOUTH SECTION CITY OF MADISON



PLOT SCALE: _____

PLOT NAME: _____

REV. DATE: _____

ORIGINATOR: CITY OF MADISON, STREETS DIVISION

CROSS SECTIONS

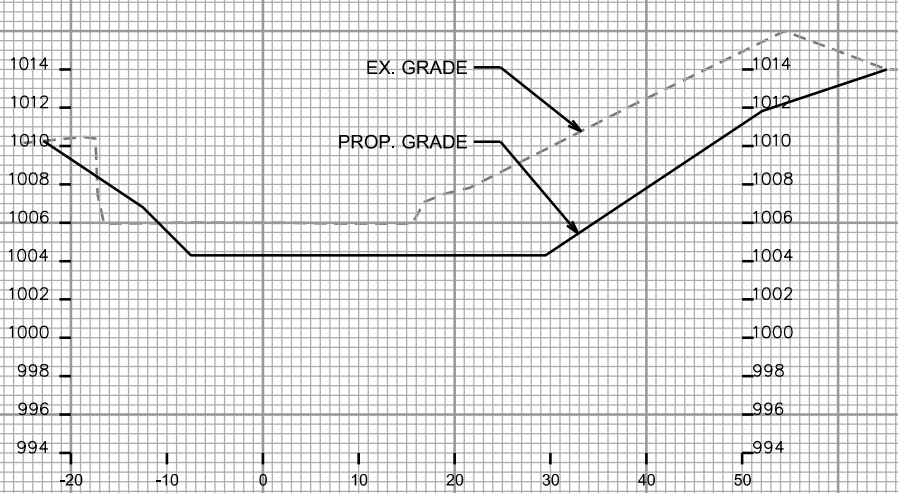
GREENTREE SOUTH SECTION CITY OF MADISON

PLOT SCALE: _____

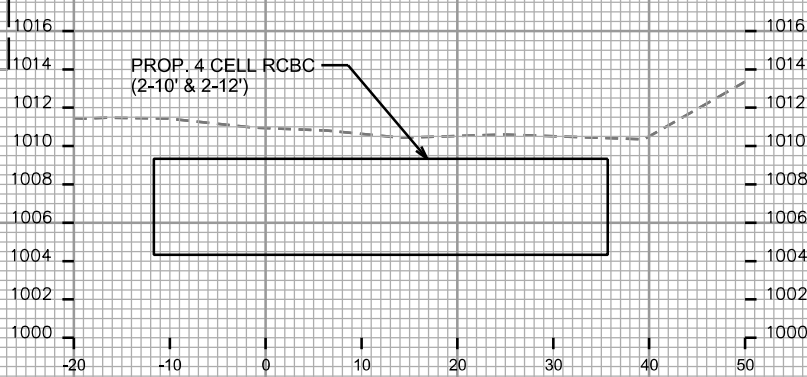
PLOT NAME: _____

REV. DATE: _____

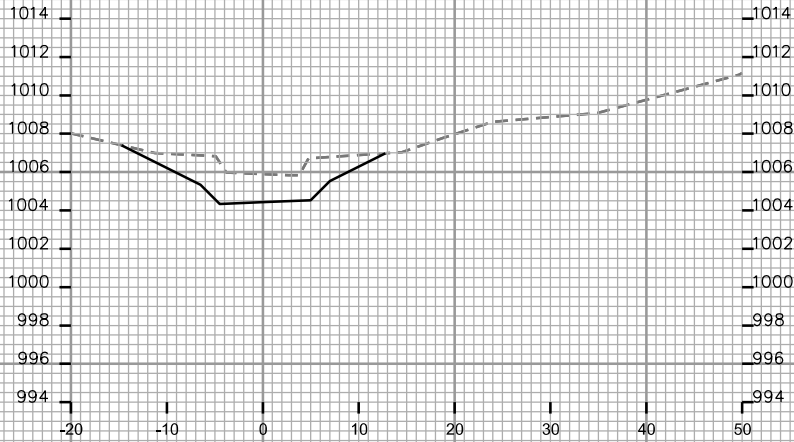
ORIGINATOR: CITY OF MADISON, STREETS DIVISION



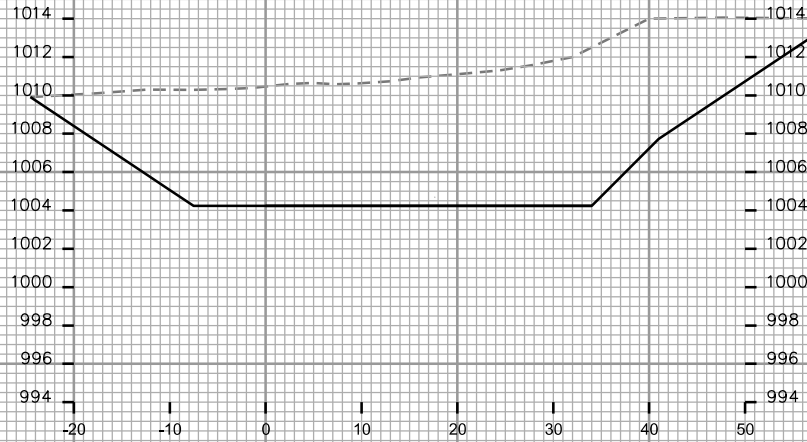
STA. 114+00



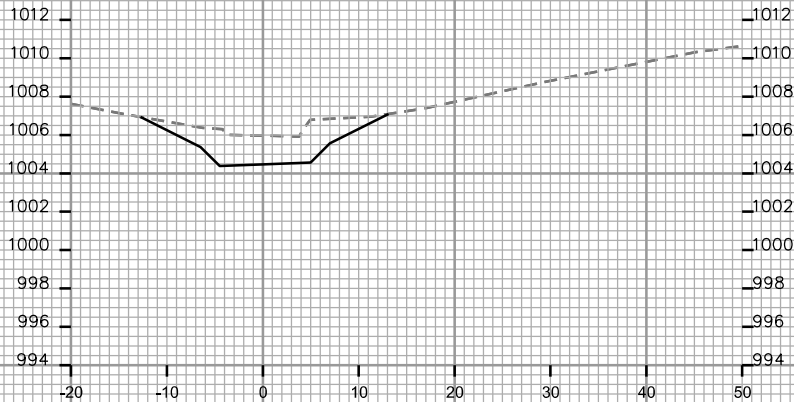
STA. 114+56



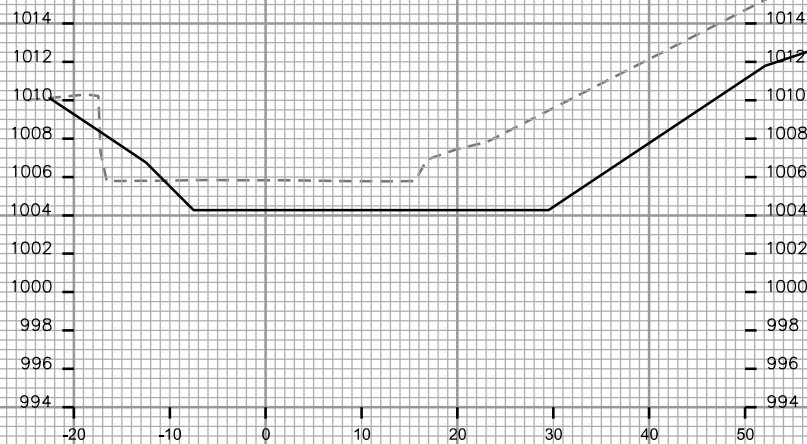
STA. 113+75



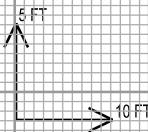
STA. 114+50



STA. 113+50



STA. 114+25



CROSS SECTIONS

WATTS ROAD SECTION

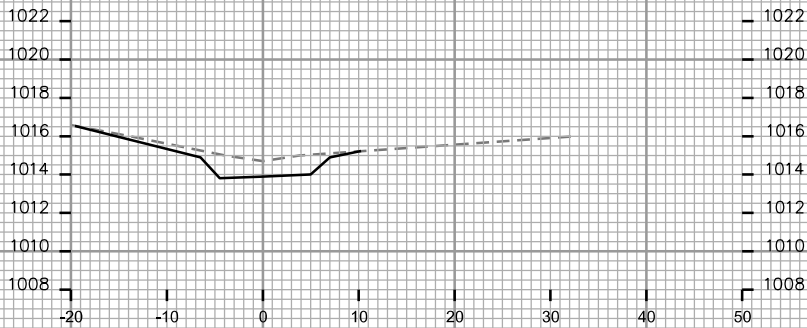
CITY OF MADISON

PLOT SCALE: _____

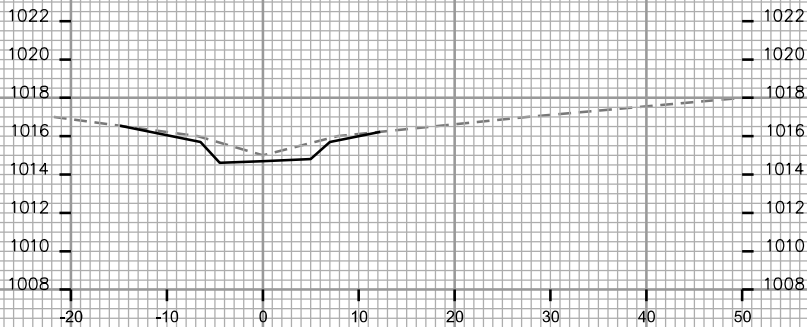
PLOT NAME: _____

REV. DATE: _____

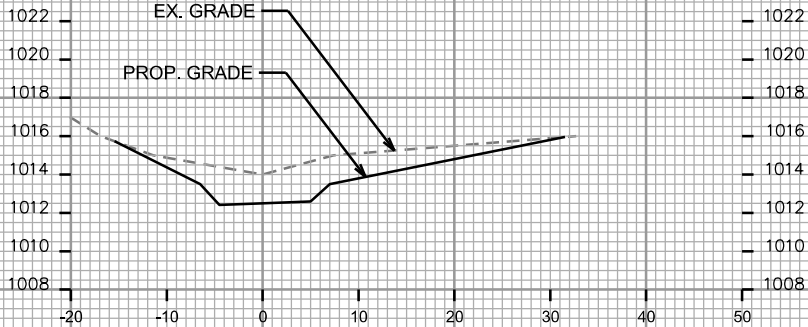
ORIGINATOR: CITY OF MADISON, STREETS DIVISION



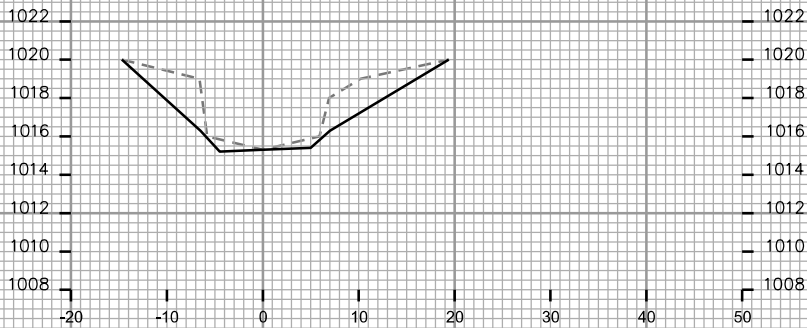
STA. 4+00



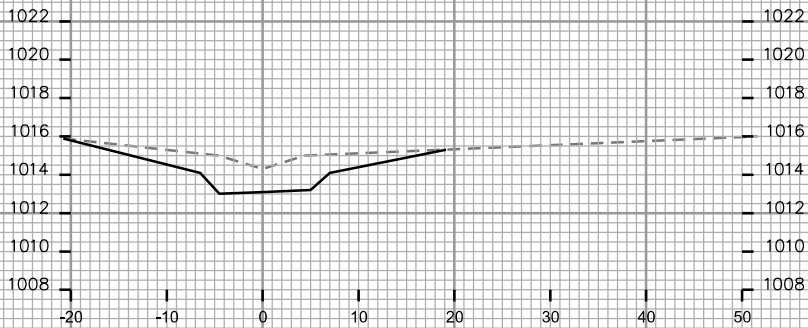
STA. 2+00



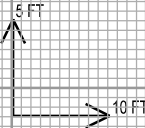
STA. 7+50



STA. 0+00

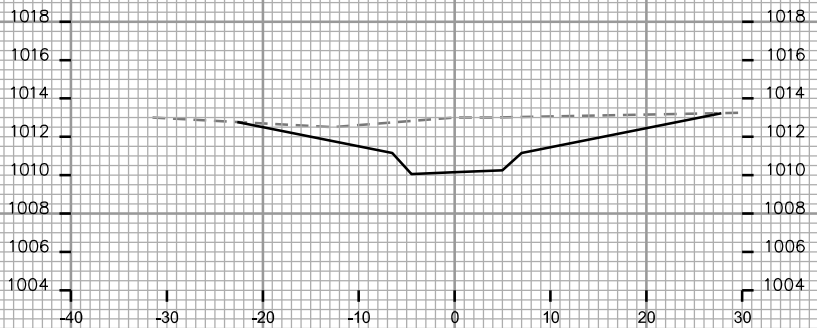


STA. 6+00

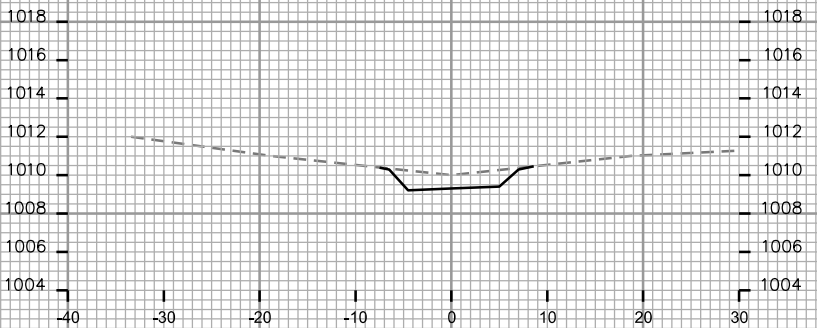


CROSS SECTIONS

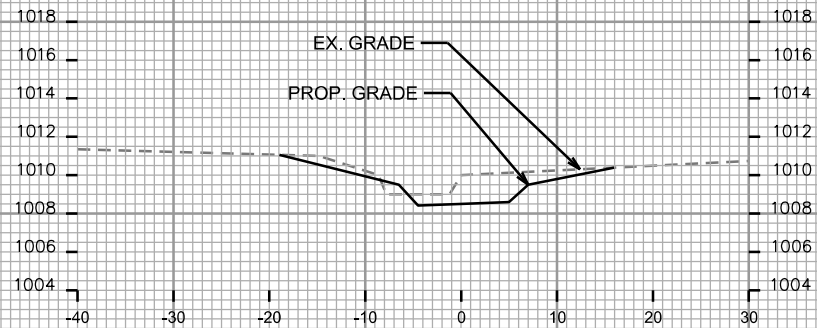
SCHROEDER ROAD SECTION CITY OF MADISON



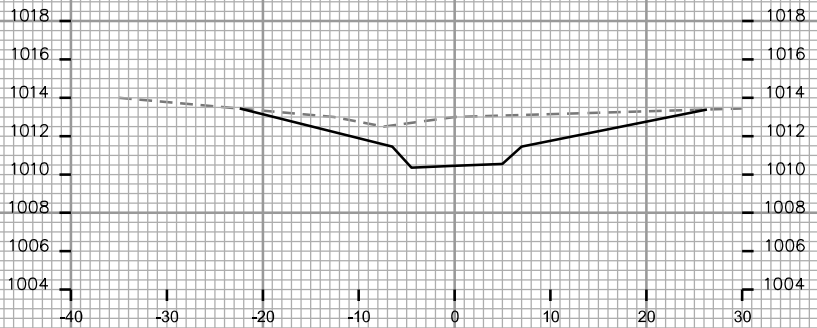
STA. 12+50



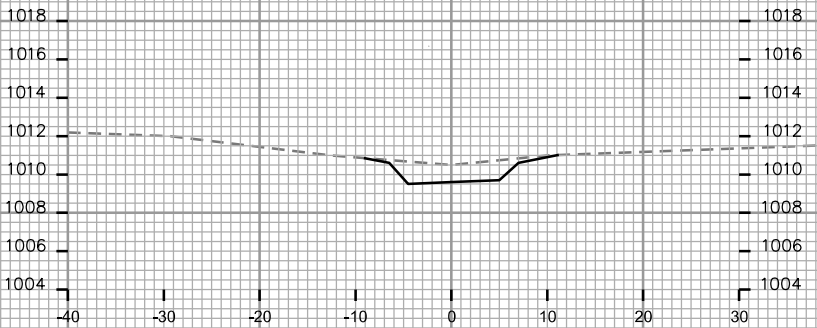
STA. 15+50



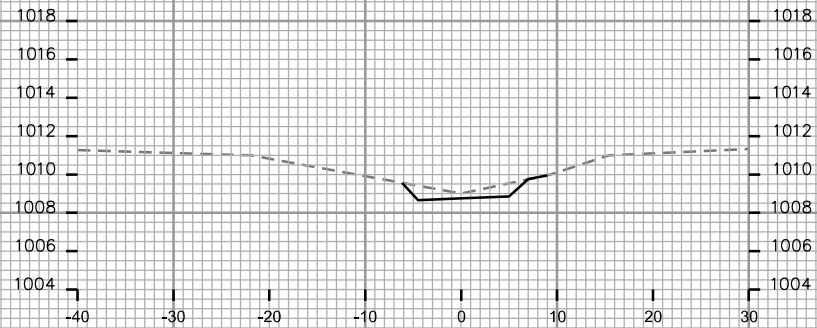
STA. 18+50



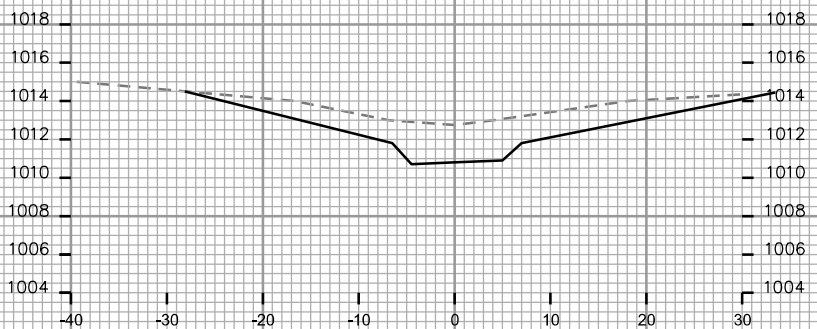
STA. 11+50



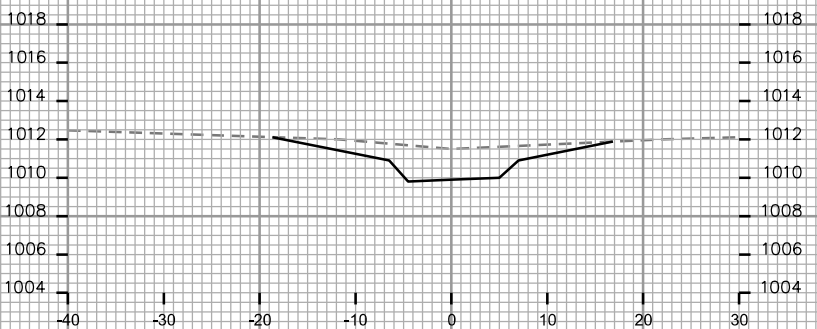
STA. 14+50



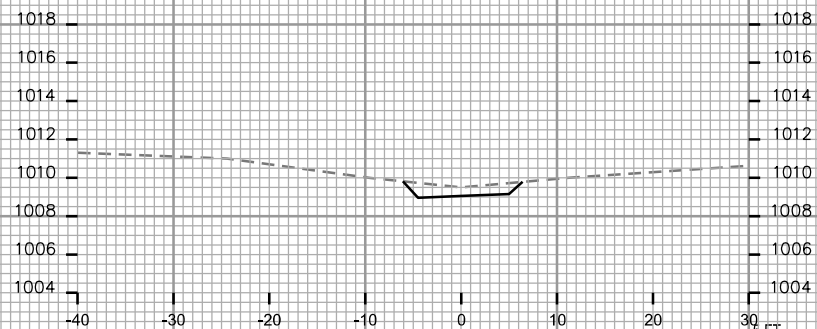
STA. 17+50



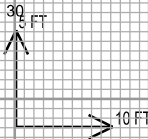
STA. 10+50



STA. 13+50



STA. 16+50

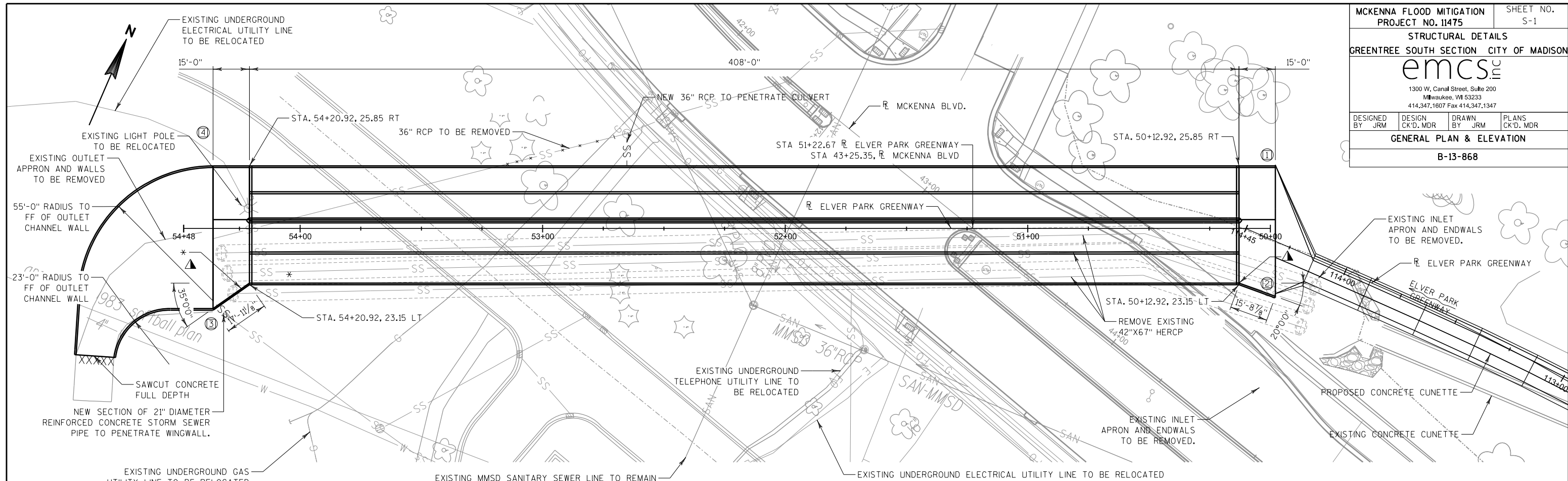


PLOT SCALE: _____

PLOT NAME: _____

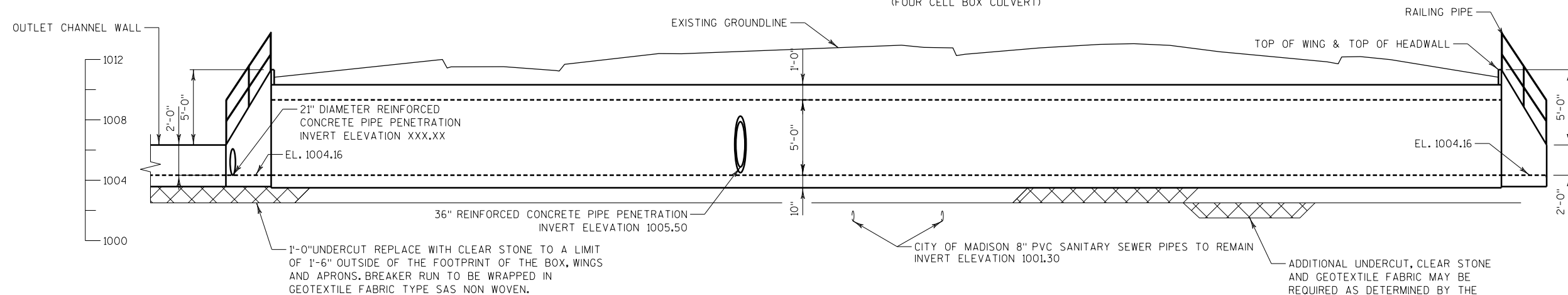
REV. DATE: _____

ORIGINATOR: CITY OF MADISON, STREETS DIVISION



PLAN

(FOUR CELL BOX CULVERT)



OUTLET

ELEVATION

SCALE 1/4"=5'

ELEVATION TAKEN ALONG R OF ELVER PARK GREENWAY

INLET

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION AND QUANTITIES
3. CONSTRUCTION STAGING DETAILS
4. APRON DETAILS
5. WINGWALL DETAILS
6. OUTLET SLAB DETAILS
7. RAILING PIPE DETAILS

LEGEND

(X) DENOTES WINGWALL NUMBER

* FOR NAME PLATE LOCATION, SEE "BOX CULVERT DETAIL" SHEET.

▲ FOR CORNER DETAILS SEE "APRON DETAILS" AND "WINGWALL DETAILS" SHEETS.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93

MATERIAL PROPERTIES:

CONCRETE MASONRY $f'_c = 3.5$ KSI
BAR STEEL REINFORCEMENT $f_y = 60$ KSI

SOIL DATA

DRY UNIT WEIGHT OF SOIL $\gamma = 120$ LBS/FT³
 $K_0 = 0.5$ FOR AT REST CONDITIONS
 $\phi = 30^\circ$
LL SURCHARGE = 2 FT
MAX FACTORED BEARING RESISTANCE = 2,000 PSF

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

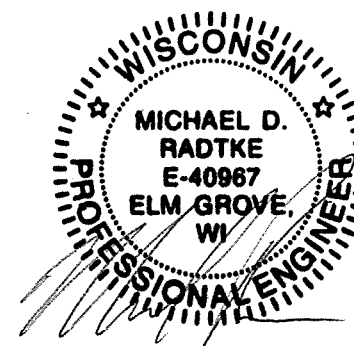
THE UPPER LIMITS OF "EXCAVATION CUT" SHALL BE THE EXISTING GROUND LINE.

SELECT FILL IS REQUIRED BEHIND ALL WINGWALLS.

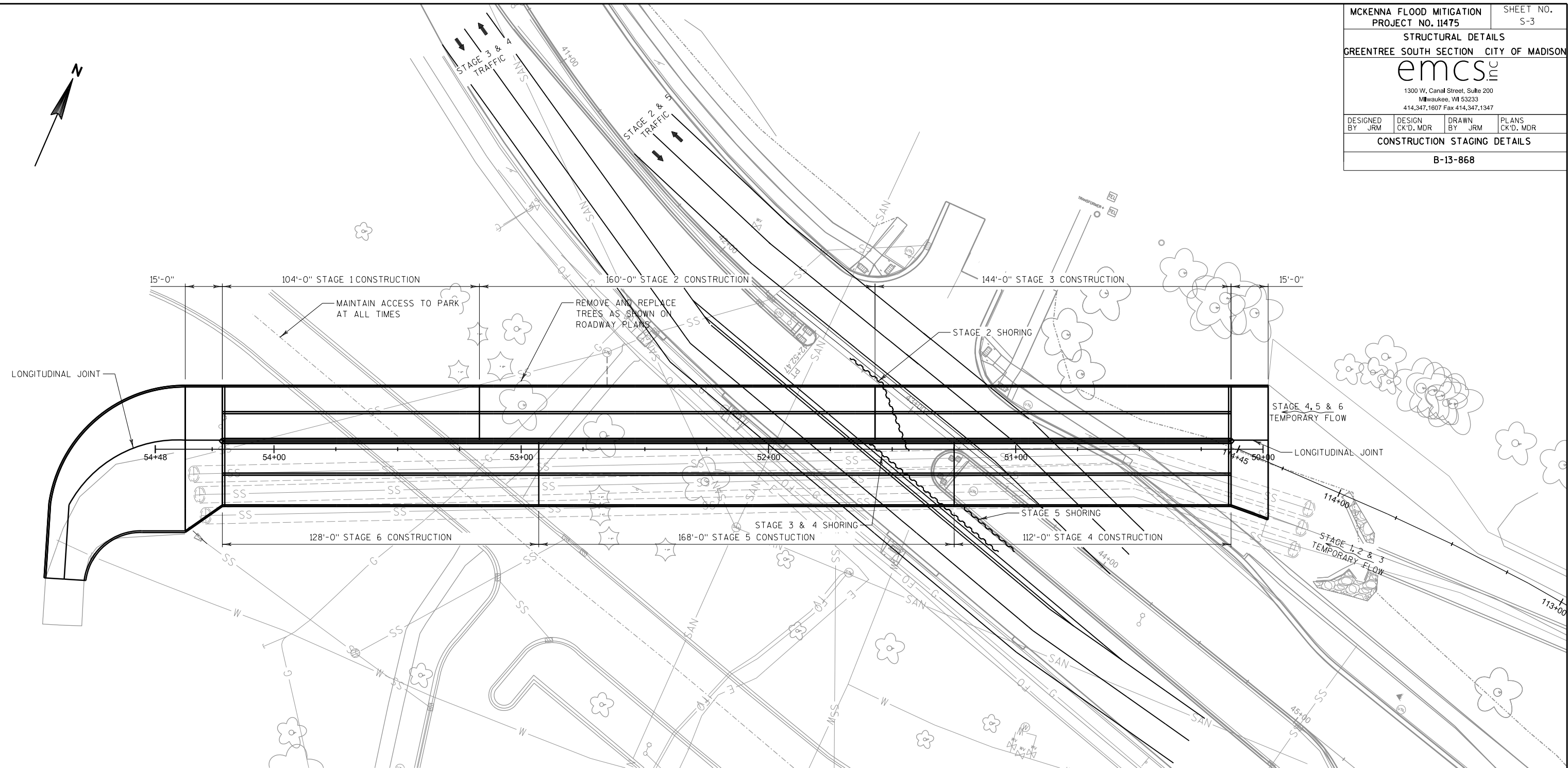
ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH "SELECT FILL" TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE BOX.

ALL CONCRETE EDGES TO BE BEVELED $\frac{3}{4}$ " UNLESS NOTED OTHERWISE.

SEE PLANS FOR R-13-337 FOR WORK EAST OF STATION 114+30.



April 1, 2019



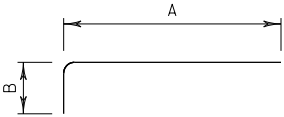
STAGED CONSTRUCTION PLAN

NOTES

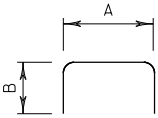
- FOR TRAFFIC STAGING INFORMATION, SEE TRAFFIC CONTROL SHEETS.
- EARTH RETENTION, STREAM DIVERSION, DEWATERING AND CONSTRUCTION SEQUENCING MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

NOTE:
ALL WING ELEVATION VIEWS SHOW
EXTERIOR FACE REINFORCING ONLY.
INTERIOR FACE REINFORCING NOT
SHOWN FOR CLAIRTY.

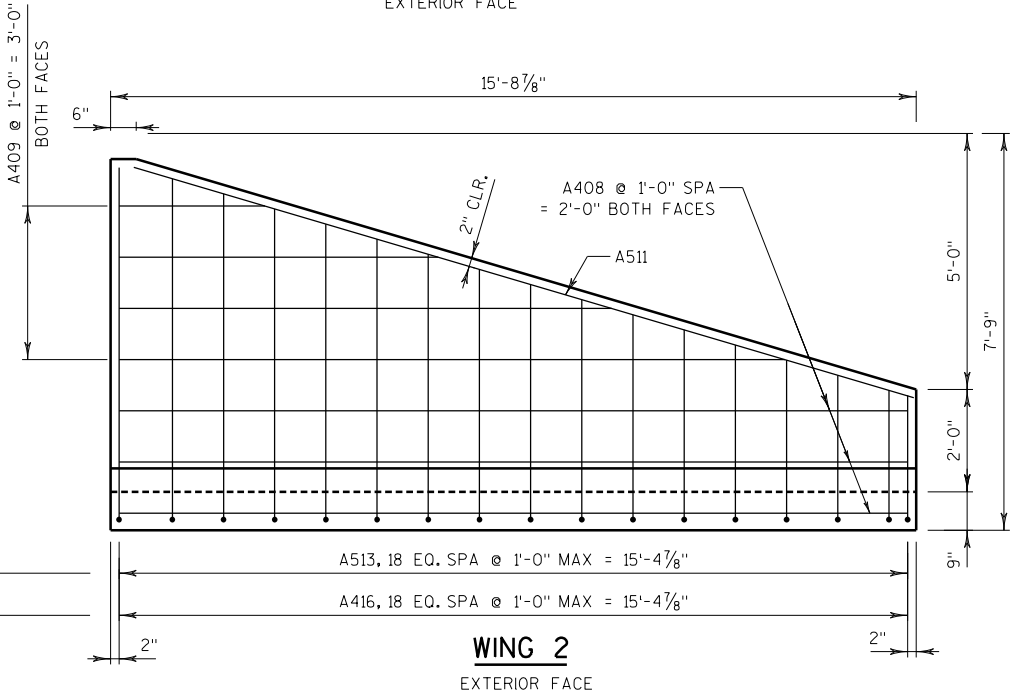
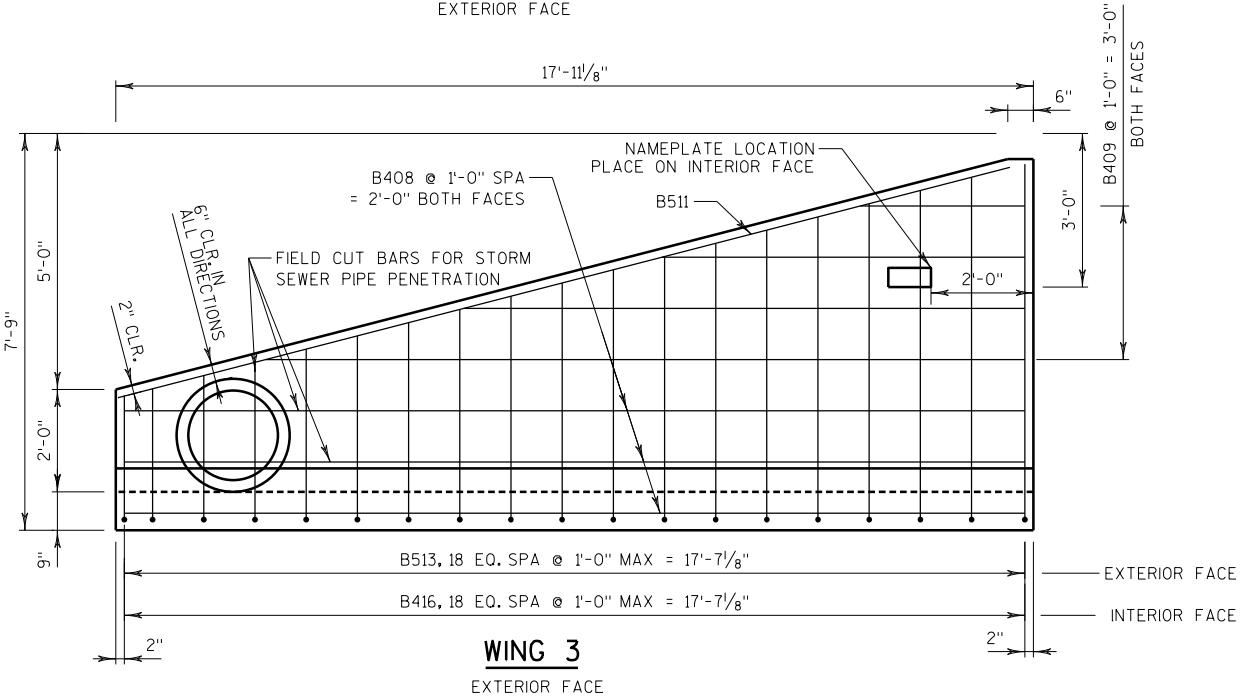
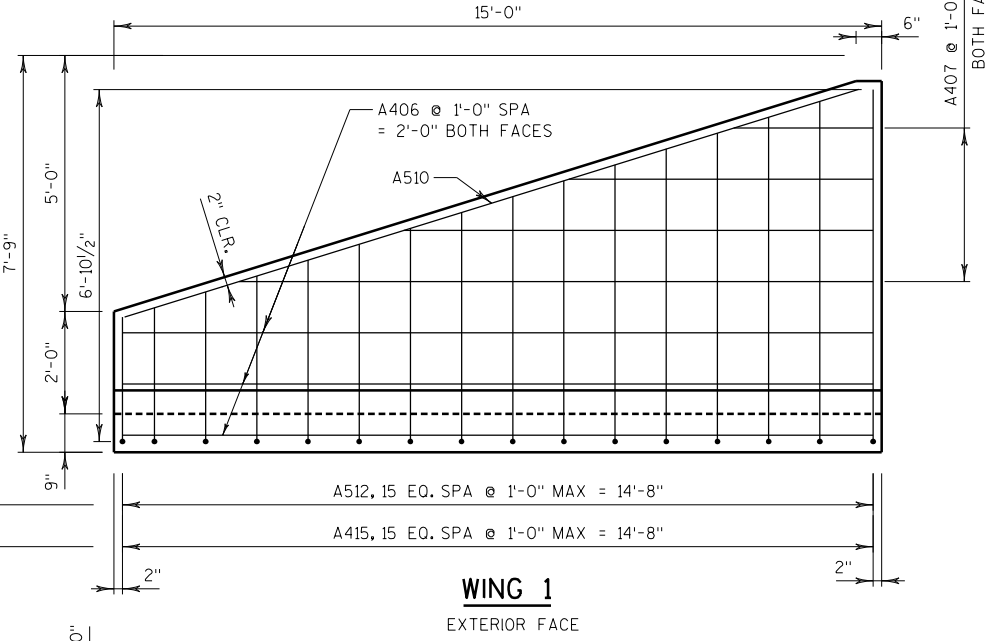
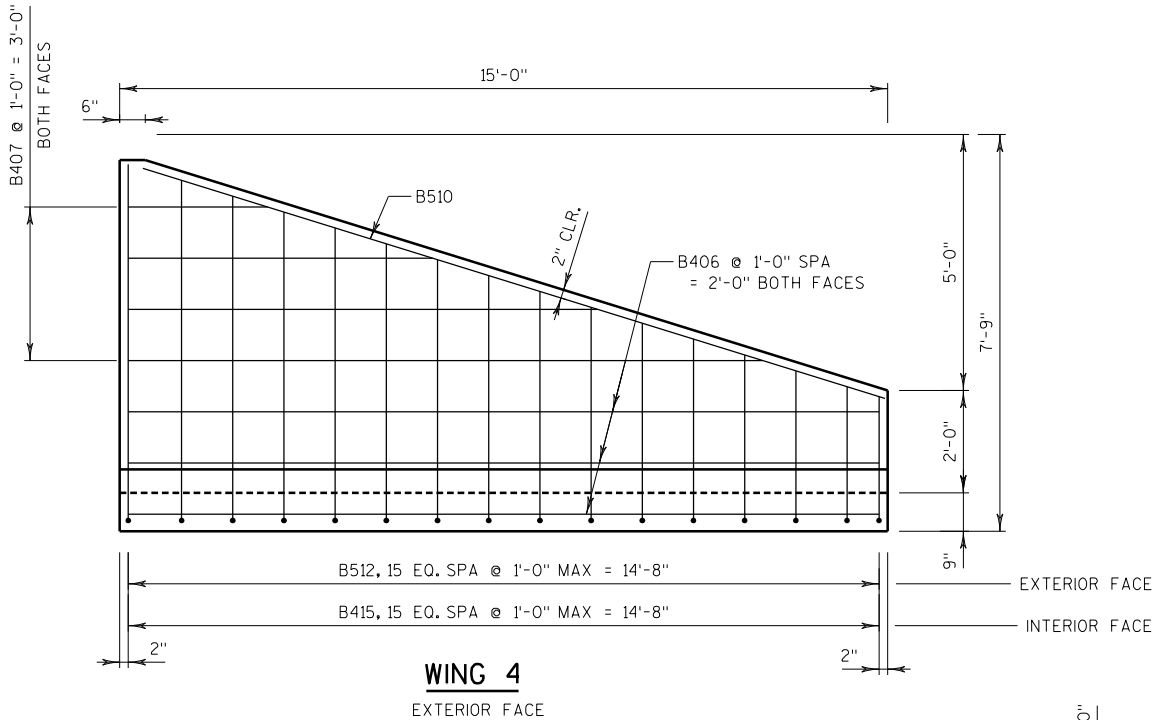
BAR MARK	'A'	'B'
A512	VARIES	6'-1"
A513	VARIES	6'-1"
A418	1'-0"	1'-0"
A419	0'-8"	0'-9"
B512	VARIES	6'-1"
B513	VARIES	6'-1"
B418	1'-0"	1'-0"
B419	0'-8"	0'-9"



A512, A513, A418, B512, B513, B418



A419, B419



BILL OF BARS - OUTLET

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A401	16	23'-7"			INLET APRON LONGITUDINAL STAGE 1
A402	16	28'-11"		X	INLET APRON LONGITUDINAL STAGE 2
A403	54	14'-6"			INLET APRON TRANSVERSE
A404	4	8'-9"		X	INLET APRON TRANSVERSE
A406	6	14'-8"			LONG. AT WING 1
A407	8	7'-7"		X	LONG. AT WING 1 TOP
A408	6	15'-5"			LONG. AT WING 2
A409	8	8'-0"		X	LONG. AT WING 2 TOP
A510	2	15'-0"			WINGWALL 1 DIAGONAL
A511	2	15'-11"			WINGWALL 2 DIAGONAL
A512	16	8'-4"	X	X	WINGWALL 1 VERT. B.F.
A513	17	8'-4"	X	X	WINGWALL 2 VERT. B.F.
A414	33	2'-12"			WINGWALL 1 VERT. I.F.
A415	16	3'-10"		X	WINGWALL 1 VERT. I.F.
A416	17	3'-10"		X	WINGWALL 1 & 2 VERT. F.F.
A417	3	5'-6"			INLET NOSE VERT.
A418	8	1'-11"	X		INLET NOSE HORIZ.
A419	56	2'-1"	X		INLET HEADERS TIES
A420	4	26'-0"			INLET HEADERS LONGITUDINAL
A421	4	22'-0"			INLET HEADERS LONGITUDINAL

BAR SERIES TABLE- OUTLET

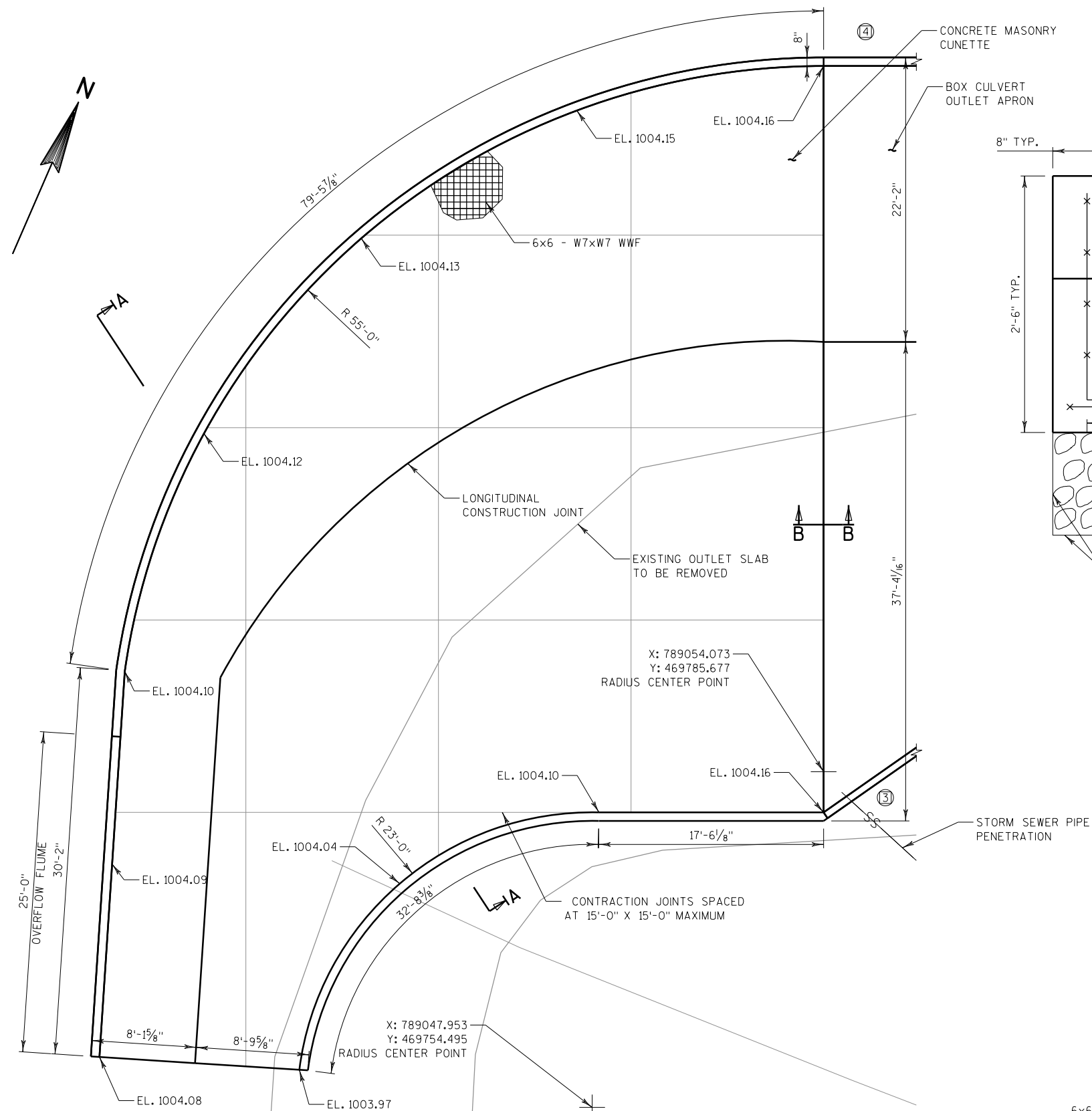
BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
B402	1 SERIES OF 16	26'-5" TO 36'-5"
B404	1 SERIES OF 9	2'-5" TO 13'-10"
B407	2 SERIES OF 4	2'-9" TO 12'-5"
B409	2 SERIES OF 4	3'-3" TO 14'-10"
B512	1 SERIES OF 16	8'-4" TO 13'-4"
B513	1 SERIES OF 19	8'-4" TO 13'-4"
B415	1 SERIES OF 16	1'-5" TO 6'-4"
B416	1 SERIES OF 19	1'-5" TO 6'-4"

BILL OF BARS - INLET

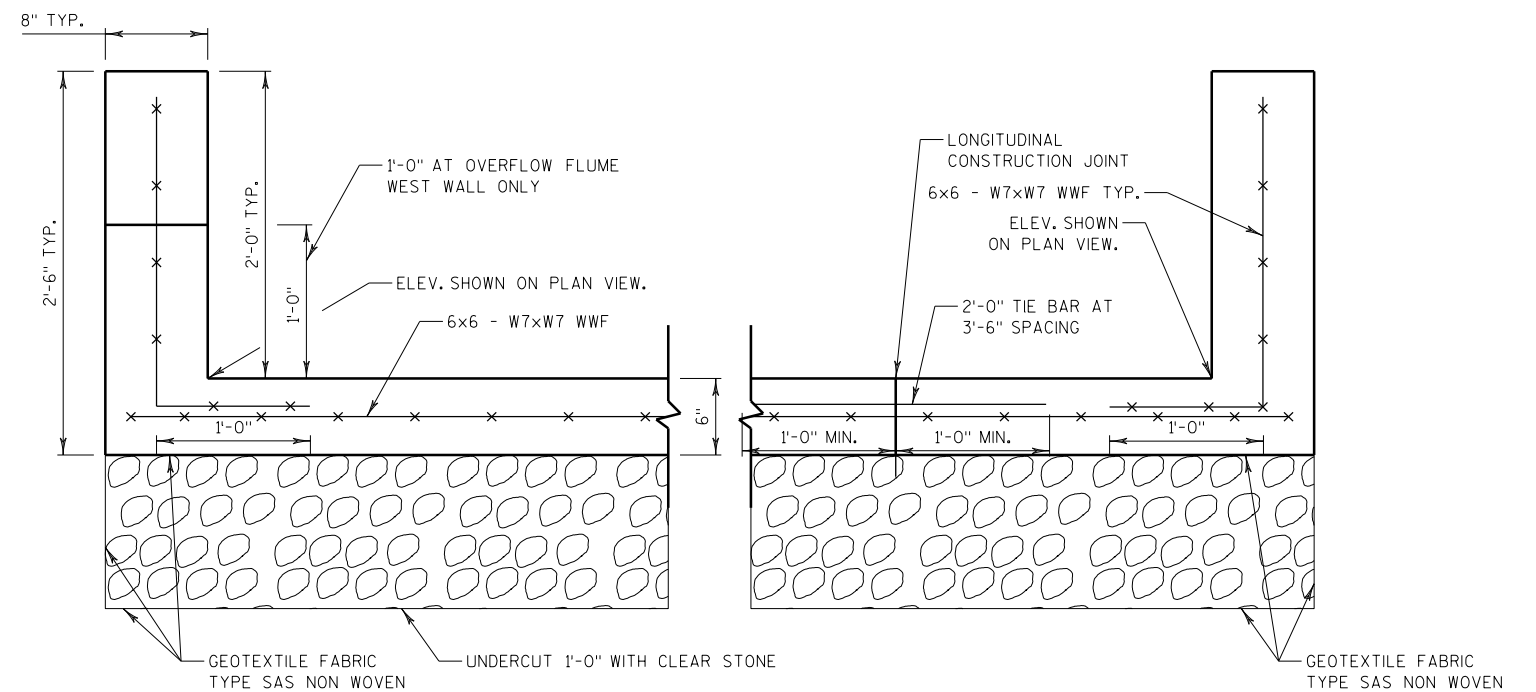
BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B401	16	23'-7"			OUTLET APRON LONGITUDINAL STAGE 1
B402	16	31'-6"		X	OUTLET APRON LONGITUDINAL STAGE 2
B403	50	14'-6"			OUTLET APRON TRANSVERSE
B404	9	8'-2"		X	OUTLET APRON TRANSVERSE
B406	6	14'-8"			LONG. AT WING 4
B407	8	7'-7"		X	LONG. AT WING 4 TOP
B408	6	17'-7"			LONG. AT WING 3
B409	8	9'-1"		X	LONG. AT WING 3 TOP
B510	2	15'-0"			WINGWALL 4 DIAGONAL TOP
B511	2	18'-0"			WINGWALL 3 DIAGONAL TOP
B512	16	8'-4"	X	X	WINGWALL 4 VERT. B.F.
B513	19	8'-4"	X	X	WINGWALL 3 VERT. B.F.
B414	35	2'-12"			OUTLET WINGWALL 3 & 4 VERT. F.F.
B415	16	3'-10"		X	OUTLET WINGWALL 4 VERT. F.F.
B416	19	3'-10"		X	OUTLET WINGWALL 3 VERT. F.F.
B417	3	5'-6"			OUTLET NOSE VERT.
B418	8	1'-11"	X		OUTLET NOSE HORIZ.
B419	56	2'-1"	X		OUTLET HEADERS TIES
B420	4	26'-0"			OUTLET HEADERS LONGITUDINAL
B421	4	22'-0"			OUTLET HEADERS LONGITUDINAL

BAR SERIES TABLE - INLET

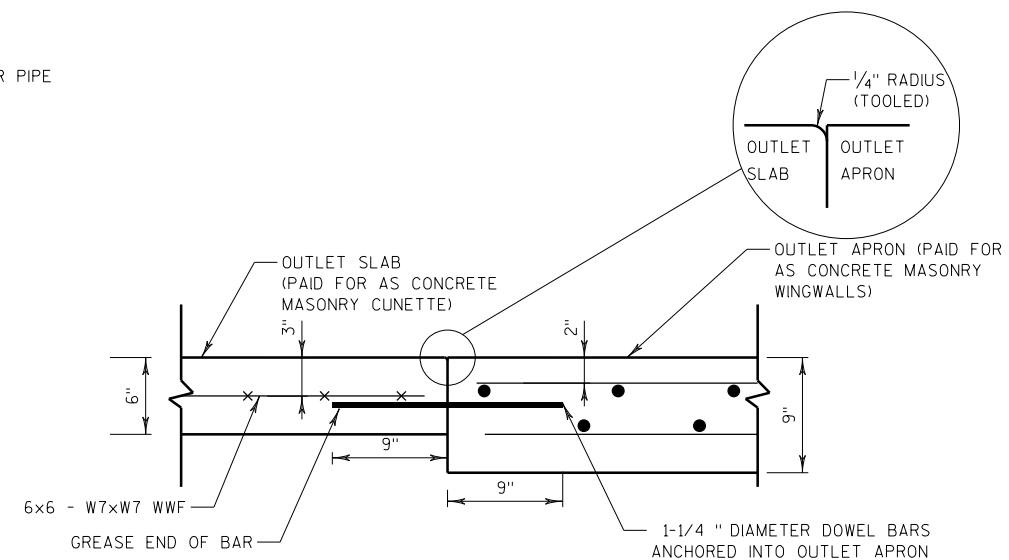
BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
A402	1 SERIES OF 16	26'-4" TO 31'-5"
A404	1 SERIES OF 4	4'-8" TO 12'-11"
A407	2 SERIES OF 4	2'-9" TO 12'-5"
A409	2 SERIES OF 4	2'-10" TO 13'-0"
A512	1 SERIES OF 16	8'-4" TO 13'-4"
A513	1 SERIES OF 17	8'-4" TO 13'-4"
A415	1 SERIES OF 16	1'-5" TO 6'-4"
A416	1 SERIES OF 17	1'-5" TO 3'-10"



OUTLET PLAN



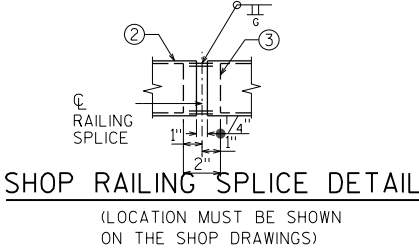
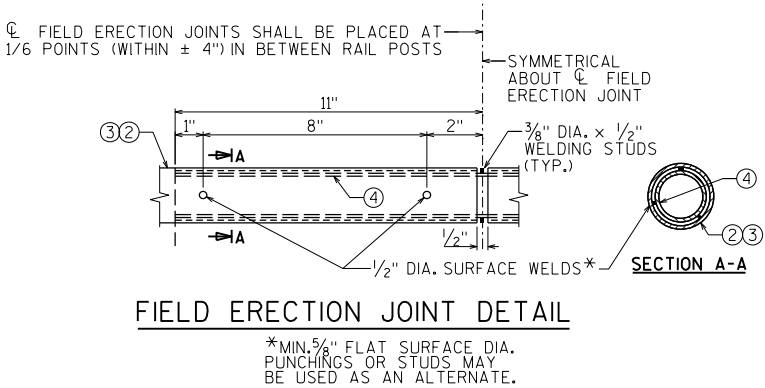
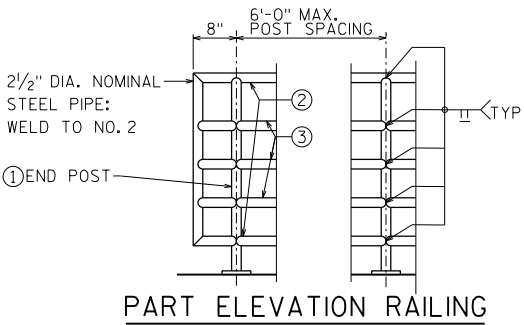
SECTION A-A THRU OUTLET SLAB & WALLS



SECTION B-B THRU OUTLET SLAB & OUTLET APRON

LEGEND

(X) DENOTES WINGWALL NUMBER



LEGEND

- 2" DIAMETER STEEL PIPE FOR POSTS. POSTS ARE TO BE SET VERTICAL: WELD TO NO. 5.
- 2" DIAMETER STEEL PIPE FOR RAILS: WELD TO NO. 1.
- 1" DIAMETER STEEL PIPE FOR INTERMEDIATE RAILS. WELD TO NO. 1.
- 1" DIAMETER PIPE SLEEVE x 1'-10" LONG PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- PLATE 5/8" X 6" X 8" WITH 3/4" X 1/2" SLOTTED HOLES
- 5/8" DIA. ADHESIVE ANCHOR, 6" MIN. EMBEDMENT (EPOXY ANCHORED) MIN. PULLOUT OF 10 KIPS. THREADED LENGTH OF ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED. (4 REQ'D. PER POST).

NOTES

BID ITEM SHALL BE "RAILING PIPE", WHICH INCLUDES ALL ITEMS SHOWN, GALVANIZING AND PAINTING.

RAILING SHALL BE FABRICATED IN LENGTHS NOT MORE THAN 3 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS. AFTER GALVANIZING PAINT RAILING ASSEMBLIES WITH A TWO COAT SYSTEM SPECIFICALLY INTENDED FOR PAINTING OF GALVANIZED SURFACES. THE FINISH COLOR SHALL BE FEDERAL COLOR NO. 27038 BLACK.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A500 GRADE B UNLESS NOTED OTHERWISE.

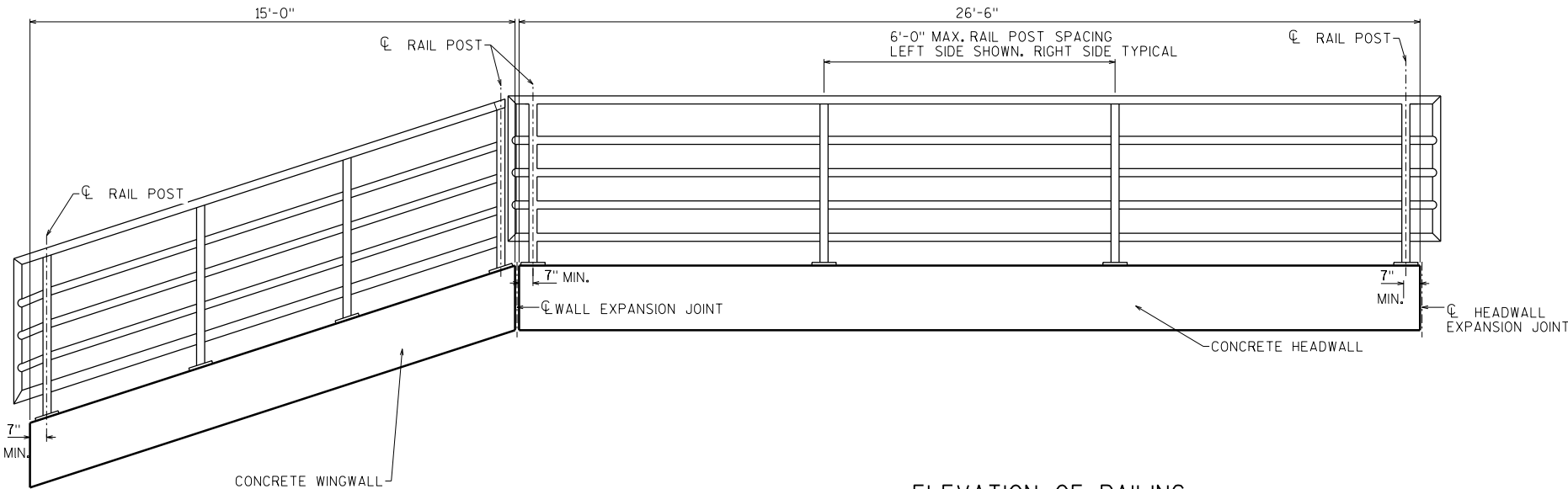
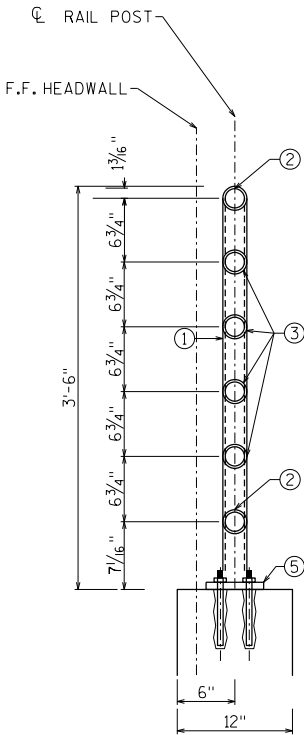
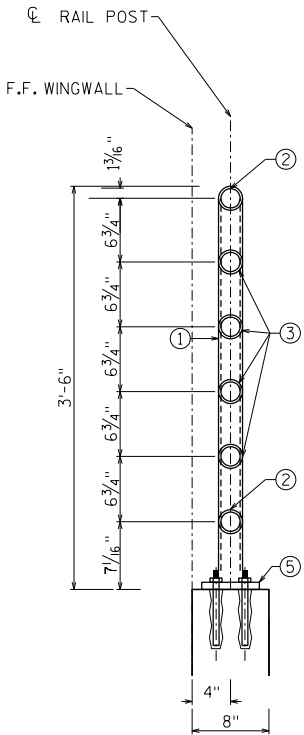
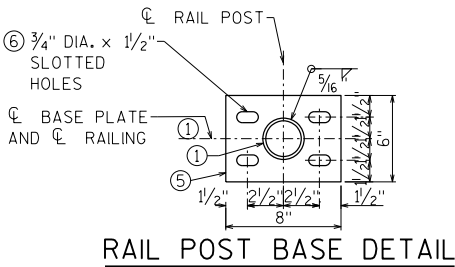
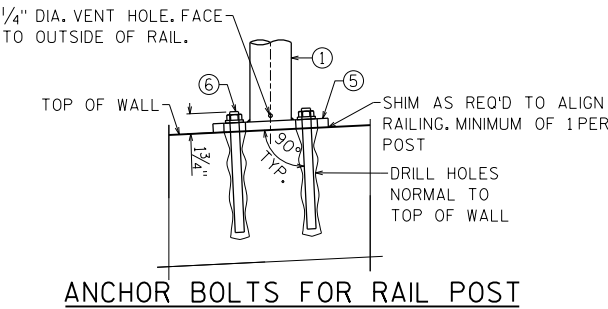
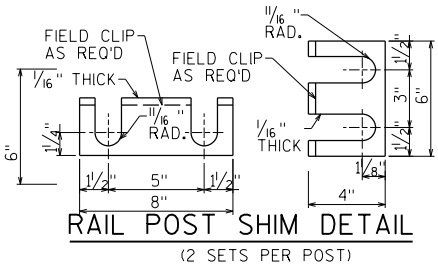
STEEL SHALL BE PROVIDED AND USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

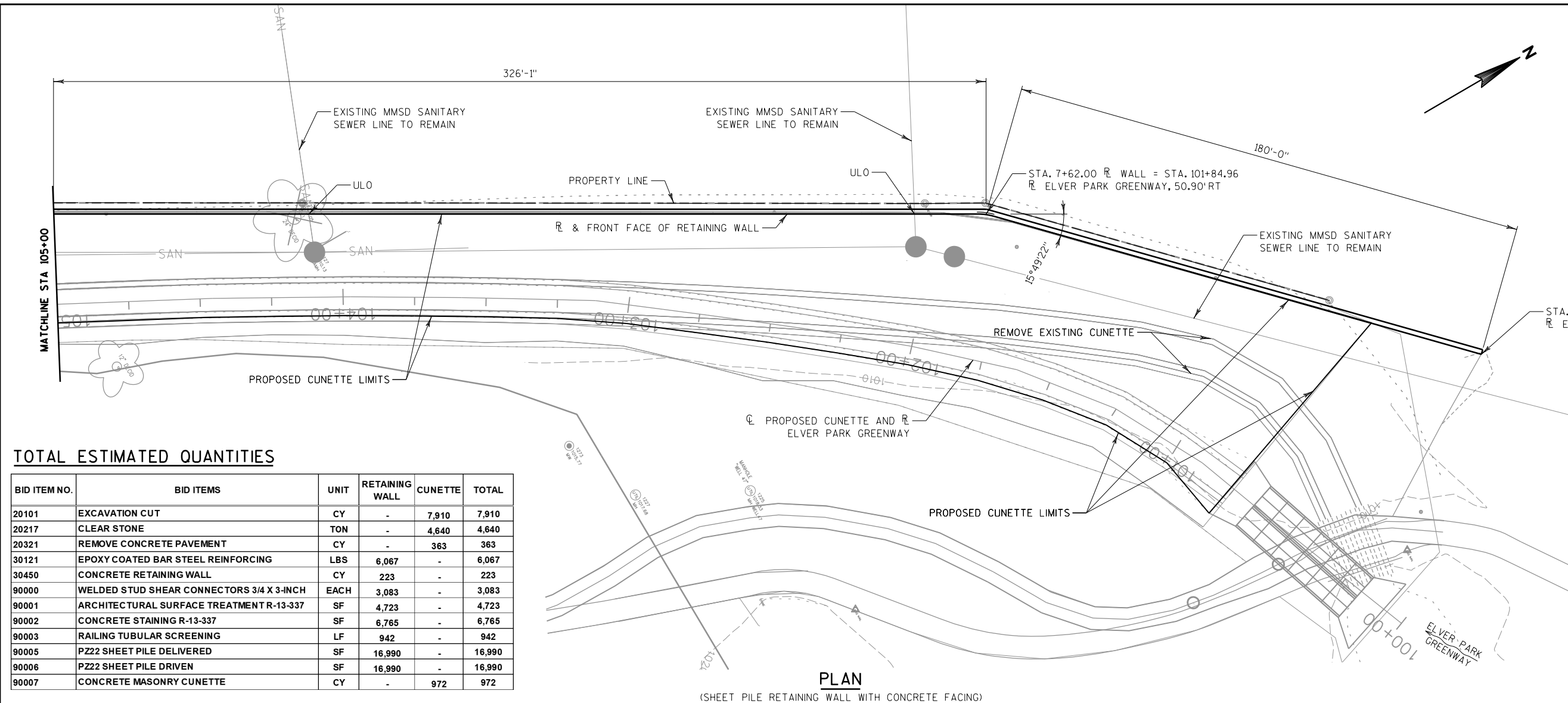
FILL BOLT SLOT OPENINGS IN SHIMS AND PLATE NO. 1 AND CAULK AROUND PERIMETER OF PLATE NO. 1 WITH NON-STAINING BLACK NON-BITUMINOUS JOINT SEALER.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING SET TO NORMAL GRADE.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE. DRILL DRAIN HOLES PRIOR TO GALVANIZING.

PAINT TOUCH-UP TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.





TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	RETAINING WALL	CUNETTE	TOTAL
20101	EXCAVATION CUT	CY	-	7,910	7,910
20217	CLEAR STONE	TON	-	4,640	4,640
20321	REMOVE CONCRETE PAVEMENT	CY	-	363	363
30121	EPOXY COATED BAR STEEL REINFORCING	LBS	6,067	-	6,067
30450	CONCRETE RETAINING WALL	CY	223	-	223
90000	WELDED STUD SHEAR CONNECTORS 3/4 X 3-INCH	EACH	3,083	-	3,083
90001	ARCHITECTURAL SURFACE TREATMENT R-13-337	SF	4,723	-	4,723
90002	CONCRETE STAINING R-13-337	SF	6,765	-	6,765
90003	RAILING TUBULAR SCREENING	LF	942	-	942
90005	PZ22 SHEET PILE DELIVERED	SF	16,990	-	16,990
90006	PZ22 SHEET PILE DRIVEN	SF	16,990	-	16,990
90007	CONCRETE MASONRY CUNETTE	CY	-	972	972



LIST OF DRAWINGS

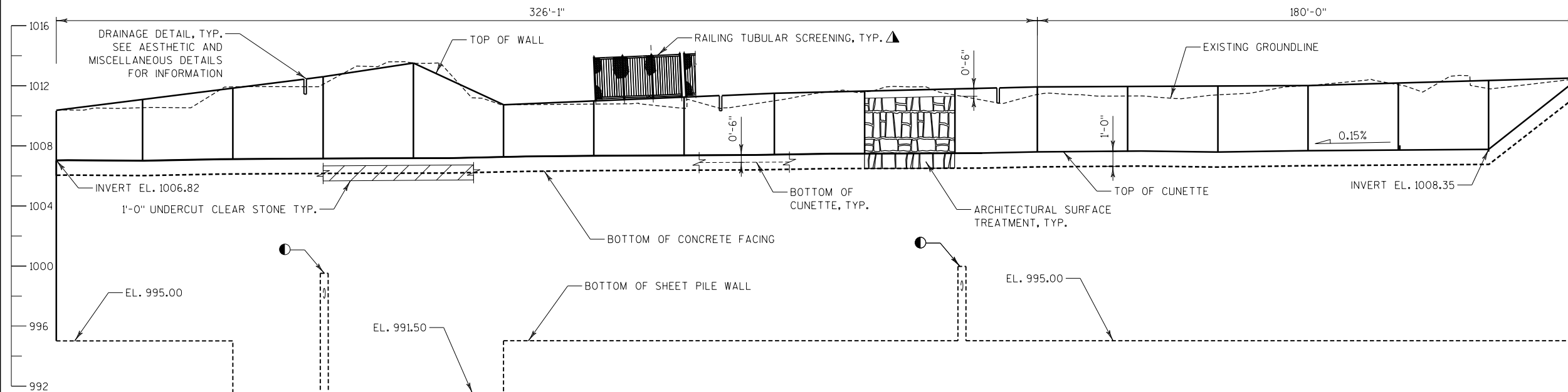
1. GENERAL PLAN & ELEVATION 1
2. GENERAL PLAN & ELEVATION 2
3. CROSS SECTION & STAGING DETAILS
4. RETAINING WALL DETAILS
5. AESTHETIC AND MISCELLANEOUS DETAILS
6. RAILING TUBULAR SCREENING

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.
- ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- ALL CONCRETE EDGES TO BE BEVELED $\frac{3}{4}$ " UNLESS NOTED OTHERWISE.
- REMOVING EXISTING CUNETTE WILL BE PAID FOR UNDER BID ITEM "REMOVING CONCRETE PAVEMENT". QUANTITY WAS CALCULATED BASED ON AN ASSUMED EXISTING CUNETTE THICKNESS OF 6".
- WALL JOINTS ARE SHOWN AT 30'-0" SPACING, HOWEVER, JOINTS SHOULD COINCIDE WITH STEEL SHEET PILE JOINTS. THE WALL JOINTS SHOULD ALSO COINCIDE WITH THE TUBULAR SCREENING RAILING POST SPACING.

LEGEND

- SHEET PILE WALL TO BE INSTALLED 1'-0" CLEAR OF MMSD FACILITIES AS SHOWN IN THE PLANS
- ▲ SEE "RAILING TUBULAR SCREENING" SHEET FOR DETAILS..



UNFOLDED ELEVATION

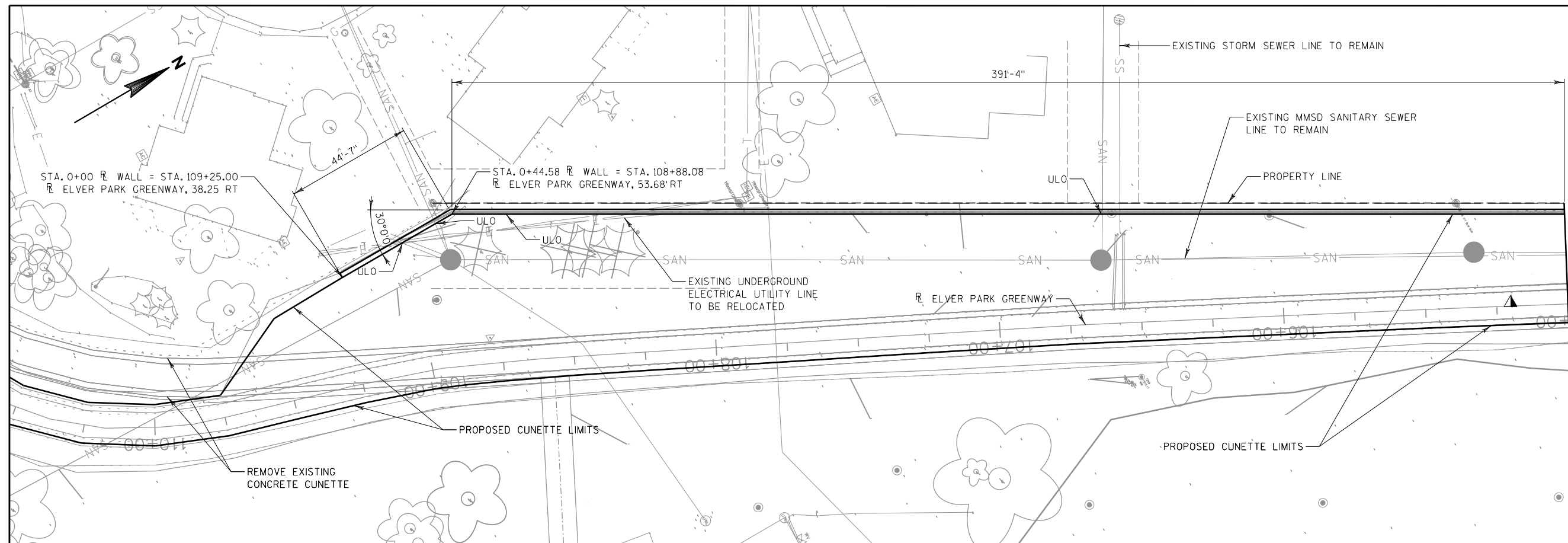
SCALE 1H:5V
ELEVATION TAKEN ALONG R OF ELVER PARK GREENWAY

SOIL DATA

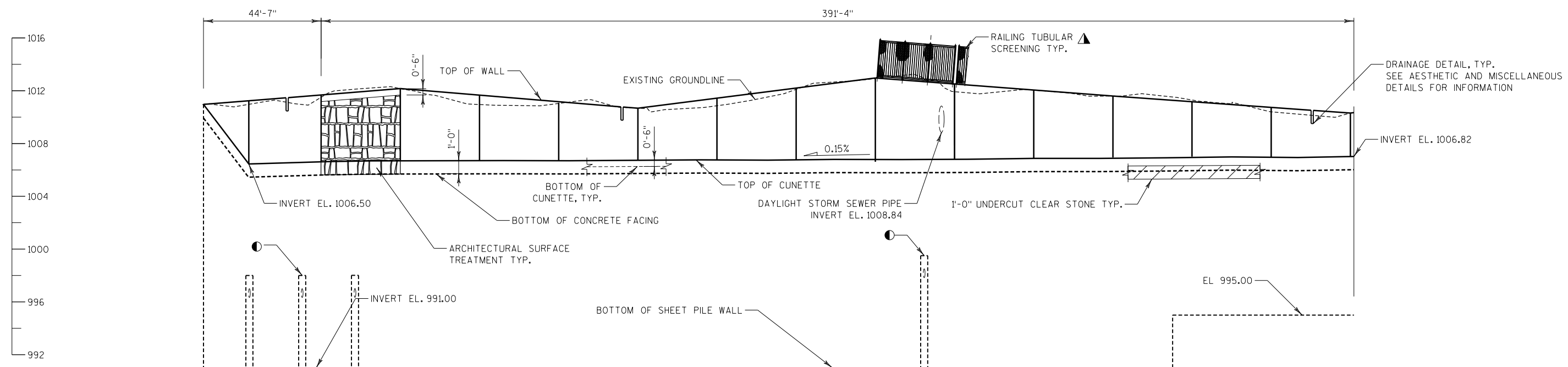
DRY UNIT WEIGHT OF SOIL $\gamma = 120 \text{ LBS/FT}^3$
MAX FACTORED BEARING PRESSURE = 2,000 PSF
 $K_o = 0.3$
 $K_p = 3.25$
 $K_o = 0.47$ FOR AT REST CONDITIONS
 $\phi = 30^\circ$

DESIGN DATA

MATERIAL PROPERTIES:
CONCRETE MASONRY $f'_c = 3.5 \text{ KSI}$
BAR STEEL REINFORCEMENT $f_y = 60 \text{ KSI}$



PLAN
(SHEET PILE RETAINING WALL WITH CONCRETE FACING)



UNFOLDED ELEVATION
SCALE 1H:5V
ELEVATION TAKEN ALONG R OF ELVER PARK GREENWAY

NOTES
SEE NOTES FROM SHEET R-1.

LEGEND
● SHEET PILE WALL TO BE INSTALLED 1'-0" CLEAR OF MMSD FACILITIES AS SHOWN IN THE PLANS
▲ SEE "RAILING TUBULAR SCREENING" SHEET FOR DETAILS.

MCKENNA FLOOD MITIGATION
PROJECT NO. 11475

SHEET NO.
R-3

STRUCTURAL DETAILS
GREENTREE SOUTH SECTION CITY OF MADISON

emcs

1300 W. Canal Street, Suite 200
Milwaukee, WI 53233
414.347.1607 Fax 414.347.1347

DESIGNED BY JRM

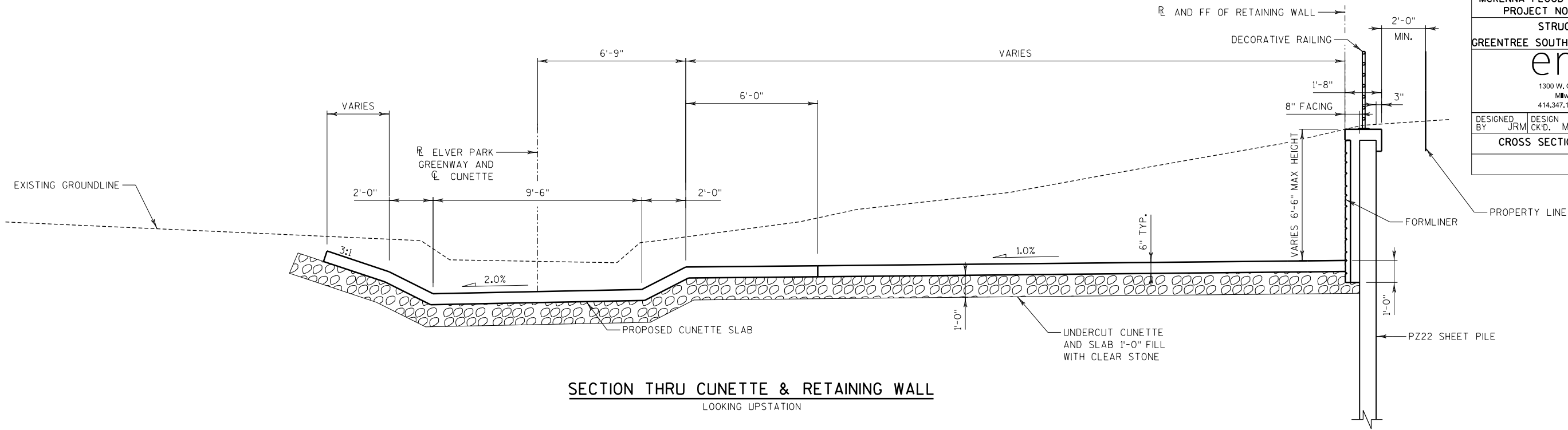
DESIGN CK'D. MDR

DRAWN BY JRM

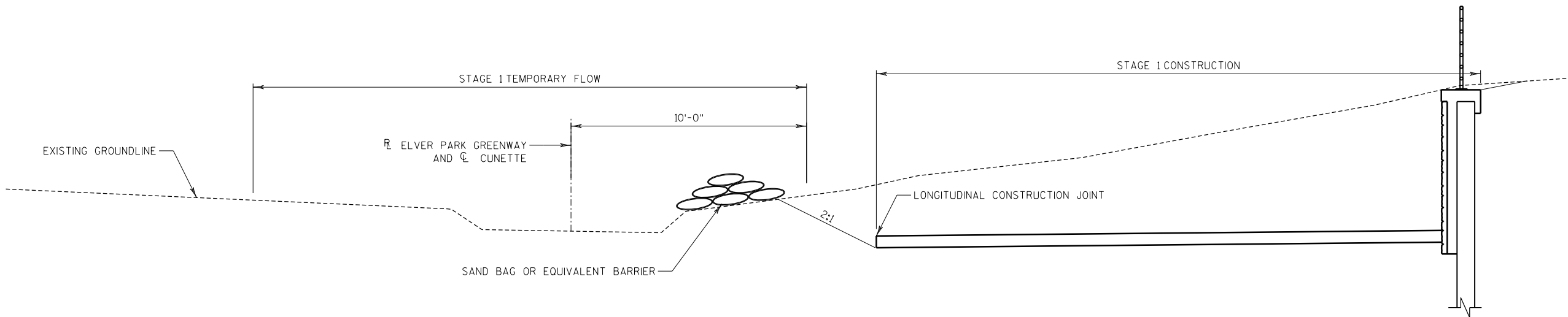
PLANS CK'D. MDR

CROSS SECTION & STAGING DETAILS

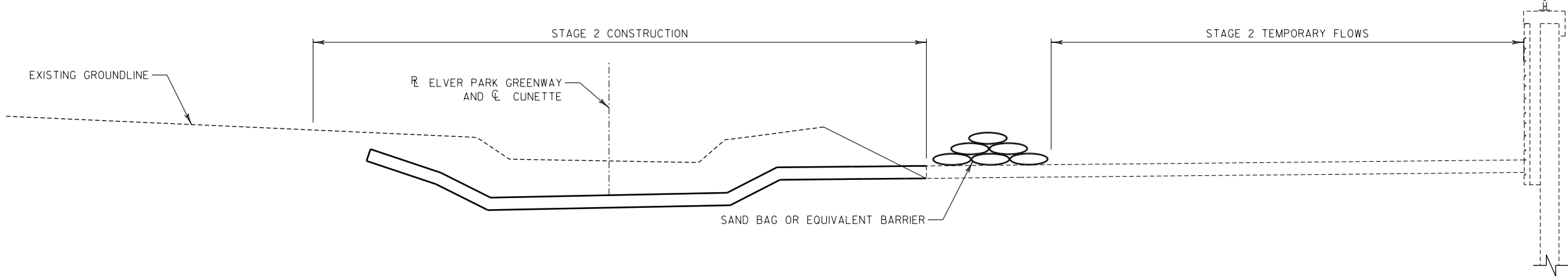
R-13-337



SECTION THRU CUNETTE & RETAINING WALL
LOOKING UPSTATION



STAGE 1 CUNETTE & RETAINING WALL CONSTRUCTION
LOOKING UPSTATION



STAGE 2 CUNETTE & RETAINING WALL CONSTRUCTION
LOOKING UPSTATION

NOTES
EARTH RETENTION, STREAM DIVERSION, DEWATERING
AND CONSTRUCTION SEQUENCING MEANS AND METHODS
ARE THE RESPONSIBILITY OF THE CONTRACTOR.

SEE SPECIFICATIONS FOR TEMPORARY WATER FLOWS
EXPECTED DURING CONSTRUCTION.

CUNETTE ELEVATIONS

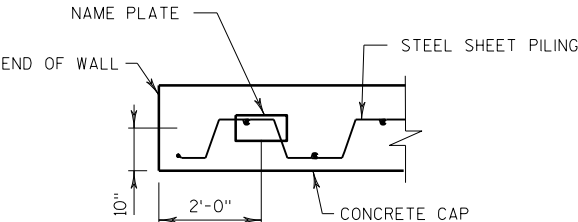
ELVER PARK GREENWAY STATION	ELEV. C	ELEV. D	ELEV. E	ELEV. F	OFFSET FROM ELEV. E TO ELEV. F
100+66.00	1006.36	1007.46	1007.27	N/A	N/A
100+75.00	1006.35	1007.44	1007.25	1007.36	5.50
101+00.00	1006.31	1007.41	1007.22	1007.22	0.00
101+25.00	1006.28	1007.37	1007.18	1007.18	0.00
101+50.00	1006.24	1007.33	1007.14	1007.14	0.00
101+75.00	1006.20	1007.30	1007.11	1007.11	0.00
102+00.00	1006.17	1007.26	1007.07	1007.07	0.00
102+25.00	1006.13	1007.22	1007.03	1007.03	0.00
102+50.00	1006.09	1007.19	1007.00	1007.00	0.00
102+75.00	1006.05	1007.15	1006.96	1006.96	0.00
103+00.00	1006.02	1007.12	1006.93	1006.93	0.00
103+25.00	1005.98	1007.08	1006.89	1006.89	0.00
103+50.00	1005.94	1007.04	1006.85	1006.85	0.00
103+75.00	1005.91	1007.00	1006.81	1006.81	0.00
104+00.00	1005.87	1006.97	1006.78	1006.78	0.00
104+25.00	1005.83	1006.93	1006.74	1006.74	0.00
104+50.00	1005.80	1006.89	1006.70	1006.70	0.00
104+75.00	1005.76	1006.85	1006.66	1006.66	0.00
105+00.00	1005.72	1006.82	1006.63	1006.63	0.00
105+25.00	1005.68	1006.78	1006.59	1006.59	0.00
105+50.00	1005.65	1006.74	1006.55	1006.55	0.00
105+75.00	1005.61	1006.71	1006.52	1006.52	0.00
106+00.00	1005.55	1006.65	1006.46	1006.46	0.00
106+25.00	1005.54	1006.63	1006.44	1006.44	0.00
106+50.00	1005.50	1006.60	1006.41	1006.41	0.00
106+75.00	1005.46	1006.56	1006.37	1006.37	0.00
107+00.00	1005.43	1006.52	1006.33	1006.33	0.00
107+25.00	1005.39	1006.48	1006.29	1006.29	0.00
107+50.00	1005.35	1006.45	1006.26	1006.26	0.00
107+75.00	1005.32	1006.41	1006.22	1006.22	0.00
108+00.00	1005.28	1006.38	1006.19	1006.19	0.00
108+25.00	1005.24	1006.34	1006.15	1006.15	0.00
108+50.00	1005.20	1006.30	1006.11	1006.11	0.00
108+75.00	1005.17	1006.26	1006.07	1006.07	0.00
109+00.00	1005.13	1006.23	1006.04	1006.04	0.00
109+25.00	1005.09	1006.19	1006.00	1006.00	0.00
109+50.00	1005.06	1006.15	1005.96	1005.96	0.00
109+75.00	1005.02	1006.11	1005.92	1005.92	0.00
110+00.00	1004.98	1006.08	1005.89	1005.89	0.00
110+25.00	1004.95	1006.04	1005.85	1005.85	0.00
110+50.00	1004.91	1006.00	1005.81	1005.81	0.00
110+75.00	1004.87	1005.97	1005.78	1005.78	0.00
111+00.00	1004.84	1005.93	1005.74	1005.74	0.00

CUNETTE ELEVATIONS (CONT.)

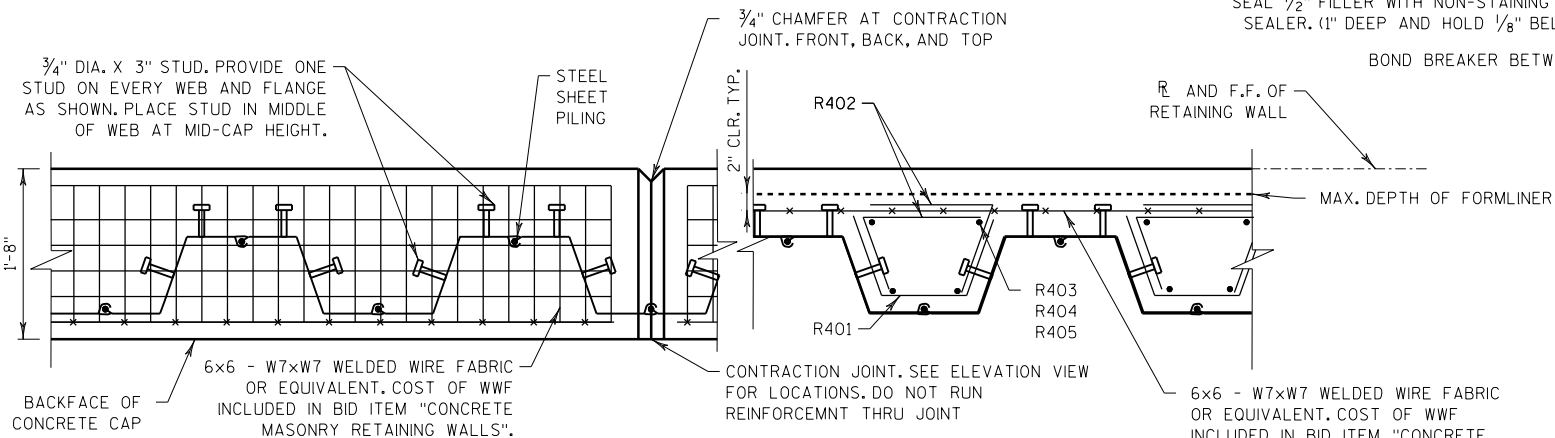
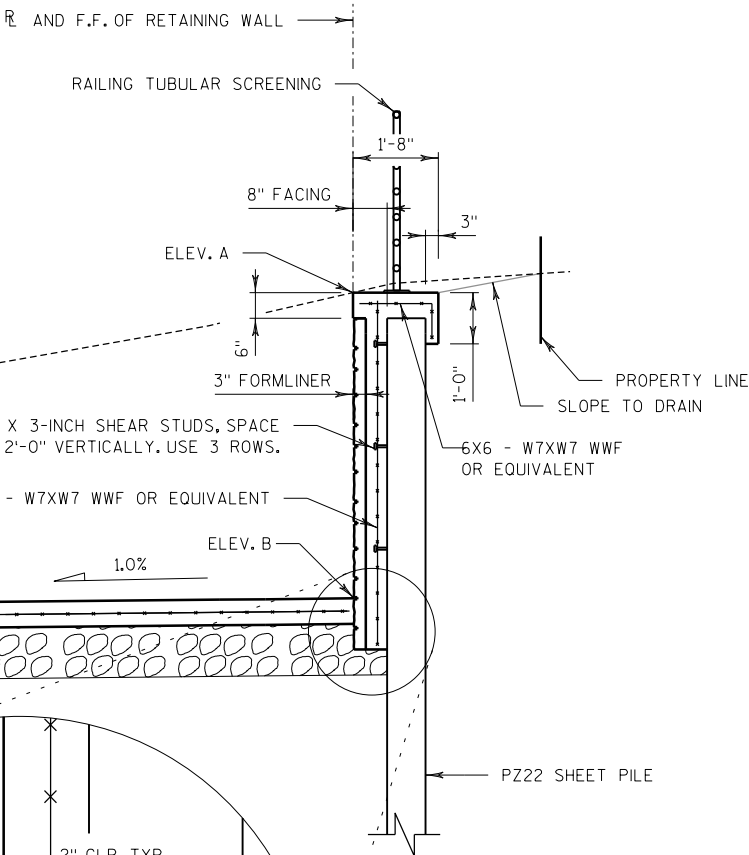
ELVER PARK GREENWAY STATION	ELEV. C	ELEV. D	ELEV. E	ELEV. F	OFFSET FROM ELEV. E TO ELEV. F
111+25.00	1004.80	1005.89	1005.70	1005.70	0.00
111+50.00	1004.76	1005.86	1005.67	1005.67	0.00
111+75.00	1004.72	1005.82	1005.63	1005.63	0.00
112+00.00	1004.69	1005.79	1005.60	1005.60	0.00
112+25.00	1004.65	1005.75	1005.56	1005.56	0.00
112+50.00	1004.61	1005.71	1005.52	1005.52	0.00
112+75.00	1004.58	1005.67	1005.48	1005.48	0.00
113+00.00	1004.54	1005.64	1005.45	1005.45	0.00
113+25.00	1004.50	1005.60	1005.41	1005.41	0.00
113+50.00	1004.47	1005.56	1005.37	1005.37	0.00
113+75.00	1004.43	1005.52	1005.33	1005.33	0.00
114+00.00	1004.31	N/A	N/A	N/A	N/A
114+25.00	1004.27	N/A	N/A	N/A	N/A
114+50.00	1004.23	N/A	N/A	N/A	N/A

RETAINING WALL ELEVATIONS

WALL STATION	NORTHING	EASTING	ELVER PARK GREENWAY STATION	ELVER PARK GREENWAY OFFSET	ELEV. A	ELEV. B
0+00.00	789851.83	470114.31	109+25.00	38.25	1010.97	1008.51
0+17.00	789851.90	470131.31	109+08.91	43.71	1011.24	1008.58
0+44.58	789852.02	470158.89	108+88.08	53.68	1011.68	1008.71
0+74.58	789867.14	470184.81	108+59.76	50.91	1012.16	1008.73
1+04.58	789882.25	470210.72	108+30.19	48.94	1011.66	1008.75
1+34.58	789897.36	470236.64	108+00.04	47.04	1011.17	1008.78
1+64.58	789912.48	470262.56	107+70.07	45.14	1010.67	1008.80
1+94.58	789927.59	470288.47	107+40.31	43.22	1011.44	1008.83
2+24.58	789942.70	470314.39	107+10.37	41.42	1012.20	1008.85
2+54.58	789957.81	470340.30	106+80.42	39.64	1012.96	1008.88
2+84.58	789972.93	470366.22	106+51.03	38.13	1012.51	1008.91
3+14.58	789988.04	470392.13	106+21.06	36.78	1012.05	1008.94
3+44.58	790003.15	470418.05	105+91.14	35.43	1011.59	1008.97
3+74.58	790018.27	470443.96	105+61.17	34.13	1011.16	1007.00
4+04.58	790033.38	470469.88	105+31.39	32.83	1010.73	1007.03
4+34.58	790048.49	470495.79	105+01.41	31.69	1010.31	1007.07
4+64.58	790063.61	470521.71	104+71.43	30.52	1011.07	1007.10
4+79.58	790071.16	470534.66	104+56.44	29.98	1011.44	1007.12
4+94.58	790078.72	470547.62	104+42.25	29.52	1011.82	1007.13
5+24.58	790093.83	470573.54	104+12.25	29.19	1012.47	1007.17
5+54.58	790108.94	470599.45	103+82.77	29.14	1013.48	1007.22
5+84.58	790124.06	470625.37	103+53.19	29.42	1010.71	1007.26
6+14.58	790139.17	470651.28	103+23.29	30.08	1010.97	1007.31
6+44.58	790154.28	470677.20	102+96.58	32.52	1011.22	1007.38
6+74.58	790169.40	470703.11	102+67.10	36.44	1011.47	1007.46
7+04.58	790184.51	470729.03	102+37.85	40.58	1011.62	1007.54
7+34.58	790199.62	470754.94	102+08.98	45.48	1011.76	1007.64
7+50.00	470768.26	790207.39	101+96.34	48.29	1011.84	1007.68
7+62.00	470778.63	790213.43	101+84.96	50.92	1011.89	1007.73
7+92.00	470799.44	790235.04	101+62.50	49.75	1011.92	1007.75
8+22.00	470820.25	790256.65	101+32.66	52.75	1011.95	1007.82
8+52.00	470841.07	790278.25	101+13.25	58.92	1011.98	1007.91
8+82.00	470861.88	790299.86	100+93.30	67.33	1012.15	1008.03
9+12.00	470882.69	790321.47	100+64.57	79.37	1012.33	1008.19
9+42.00	470903.50	790343.07	100+37.00	91.00	1012.50	1008.35

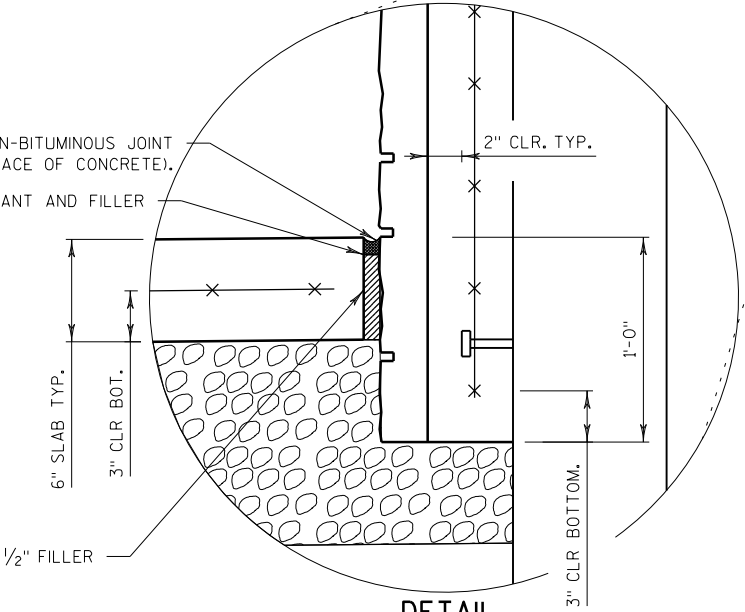


NAME PLATE DETAIL
(PLAN VIEW OF CAP)



CONCRETE CAP DETAIL
(PLAN VIEW OF CAP)

WALL REINFORCING DETAIL
(PLAN VIEW BELOW CAP)



DETAIL

NOTES

THE MAXIMUM SPACING BETWEEN SAWCUT CONTRACTION JOINTS IS 15'-0" IN BOTH DIRECTIONS. SEE SHEET R-5 FOR DETAILS.

FOR DOWELLED JOINT DETAILS AT BOX CULVERT INLET SLAB SEE B-13-868 PLANS.

MCKENNA FLOOD MITIGATION
PROJECT NO. 11475

SHEET NO.
R-4

STRUCTURAL DETAILS
GREENTREE SOUTH SECTION CITY OF MADISON

1300 W. Canal Street, Suite 200
Milwaukee, WI 53233
414.347.1607 Fax 414.347.1347

DESIGNED BY JRM
DESIGN CK'D. MDR
DRAWN BY JRM
PLANS CK'D. MDR

RETAINING WALL DETAILS

R-13-337

NOTES

EXPOSED FACE TO BE STAINED 1'-0" (MIN) BELOW FINISHED GRADE. PAY LIMIT IS 1'-0" BELOW FINISHED GRADE (FF).

ALL JOINTS SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE WHERE BOTTOM OF LIP INTERSECTS WITH PANEL JOINT.

AESTHETIC PANEL PATTERN SHALL BE PLACED AS SHOWN ON GENERAL PLAN AND ELEVATION SHEET.

☐ PROVIDE FORM LINED ARCHITECTURAL SURFACE TREATMENT USING RUSTIC ASHLAR PATTERN. ARCHITECTURAL SURFACE TREATMENT TO EXTEND VERTICALLY FROM 6" COPING AT TOP OF WALL TO A MINIMUM OF 1'-0" BELOW TOP OF CUNETTE SLAB ELEVATION AND EXTEND HORIZONTALLY FULL LENGTH OF EXPOSED WALL FACE.

ALL ARCHITECTURAL SURFACE TREATMENT FORMLINER AREAS SHALL BE STAINED IN A RANDOMLY MIXED COLOR ARRANGMENT TO ACHIEVE A TEXTURED LOOK AS DIRECTED BY THE CITY.

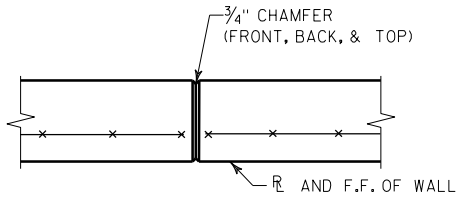
PLACE REINFORCEMENT WITH MINIMUM 2" OF CLEAR COVER UNLESS OTHERWISE SHOWN.

CONCRETE STAINING SCHEDULE

MARK	COLOR	LOCATION	NOTES
A	BASE COLOR-FED COLOR 33722	RAISED AREAS (STONE)	EXPOSED FACES TO 0'-6" BELOW FINAL GRADE
B	ACCENT COLOR MEDIUM GRAY-FED COLOR 36424	DEPRESSED AREAS (GROUT)	EXPOSED FACES TO 0'-6" BELOW FINAL GRADE
		COPING	FACE, TOP, AND UNDERSIDE
C	ACCENT COLOR BLACK-FED COLOR 27038	TUBULAR RAILING SCREENING	TWO-COAT FOR SPECIFIC USE WITH GALVANIZED STEEL

RUSTIC ASHLAR PATTERN

FORMLINER THICKNESS = 3"
SIZE = 8" TO 32"
MAX. RELIEF = 2"

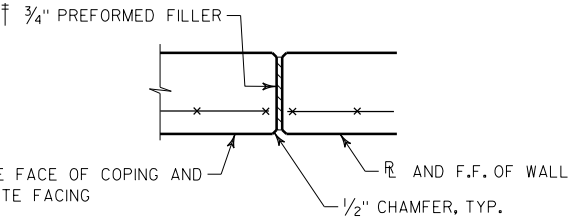


WALL CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 12'-0" AND MUST LINE UP WITH THE STEEL SHEET PILE JOINTS.

ALL CONTRACTION JOINTS TO EXTEND THE FULL DEPTH OF COPING.



WALL EXPANSION JOINT

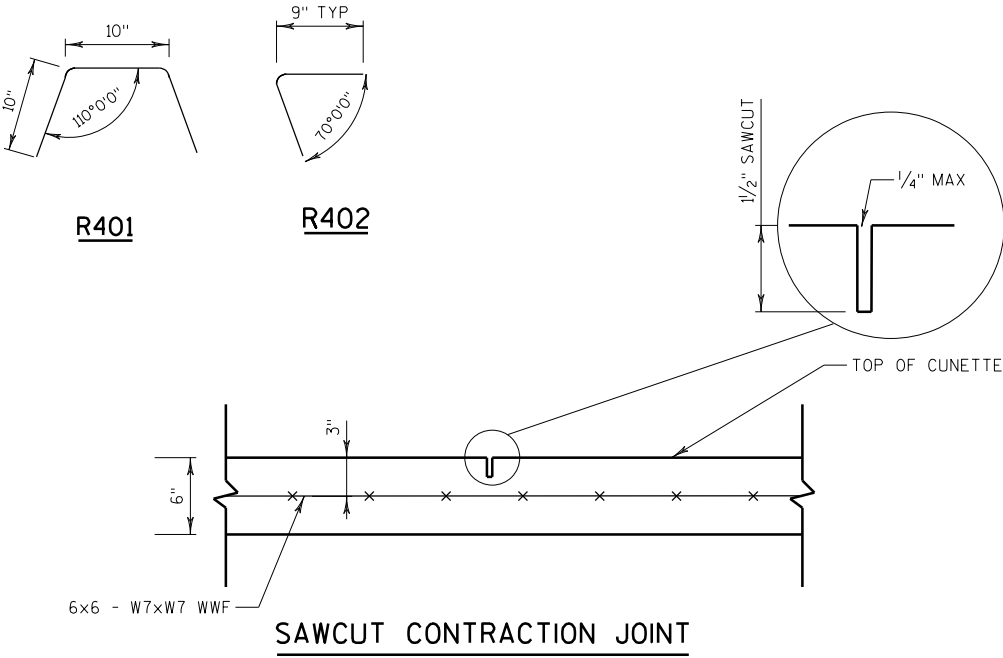
DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 50'-0" AND MUST LINE UP WITH THE SHEET PILE JOINTS.

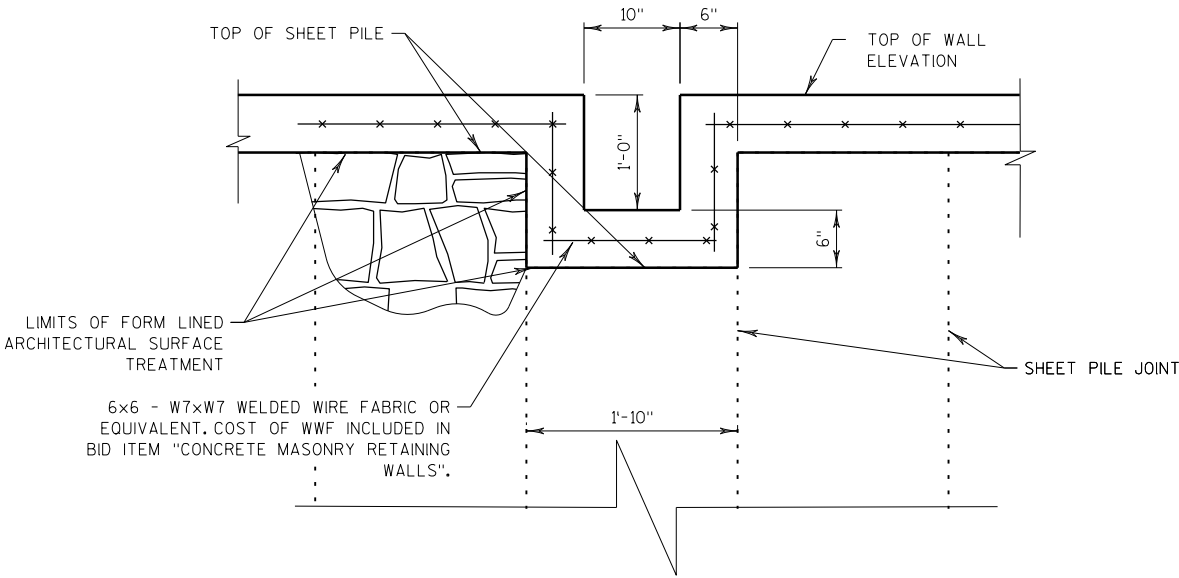
† SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF PREFORMED FILLER WITH A NON-STAINING, COLOR TO MATCH WALL PANEL OR COPING STAINING, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	LOCATION
R401	X	2570	1'-5"	X	PAVING BLOCK VERT. DOWEL
R402	X	1285	2'-8"	X	PAVING BLOCK STIRRUP
R403	X	260	4'-0"		SHEET PILE VERTICAL
R404	X	688	5'-0"		SHEET PILE VERTICAL
R405	X	196	6'-0"		SHEET PILE VERTICAL



SAWCUT CONTRACTION JOINT

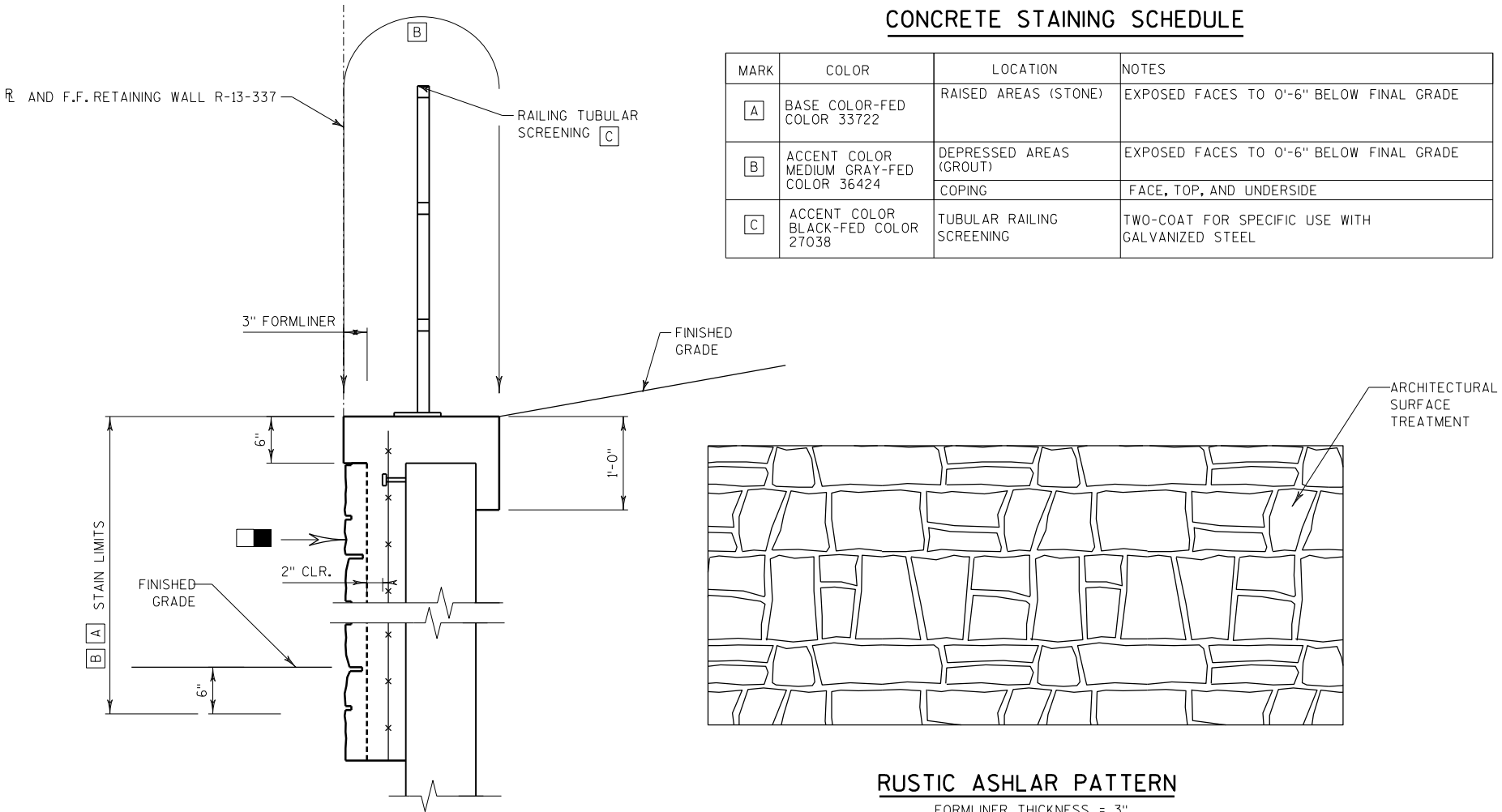


DRAINAGE DETAIL

(ELEVATION VIEW AT TOP OF CAP)

PLACE AT EXISTING LOW SWALES AT THE DIRECTION OF THE FIELD ENGINEER TO ALLOW FOR DRAINAGE

SPACE TUBULAR RAIL POSTS MIN. 7" FROM EDGE OF DRAINAGE DETAIL. SEE TUBULAR RAILING SCREENING SHEET FOR POST ANCHORAGE DETAILS.



FORMLINER AND STAINING DETAILS AT WALL

MCKENNA FLOOD MITIGATION PROJECT NO. 11475				SHEET NO. R-6	
STRUCTURAL DETAILS					
GREENTREE SOUTH SECTION CITY OF MADISON					
emcs _{INC}					
1300 W. Canal Street, Suite 200 Milwaukee, WI 53233 414.347.1607 Fax 414.347.1347					
DESIGNED BY JRM		DESIGN CK'D. MDR		DRAWN BY JRM	
				PLANS CK'D. MDR	
RAILING TUBULAR SCREENING DETAILS					
R-13-337					

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. PLATES, ANGLES, BARS AND SHIMS SHALL CONFORM TO ASTM A709, GRADE 36. FENCE FABRIC SHALL CONFORM TO F668, CLASS 2B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET SPACINGS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTAL ALONG CENTERLINE OF RAILING AT BASE OF POST.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

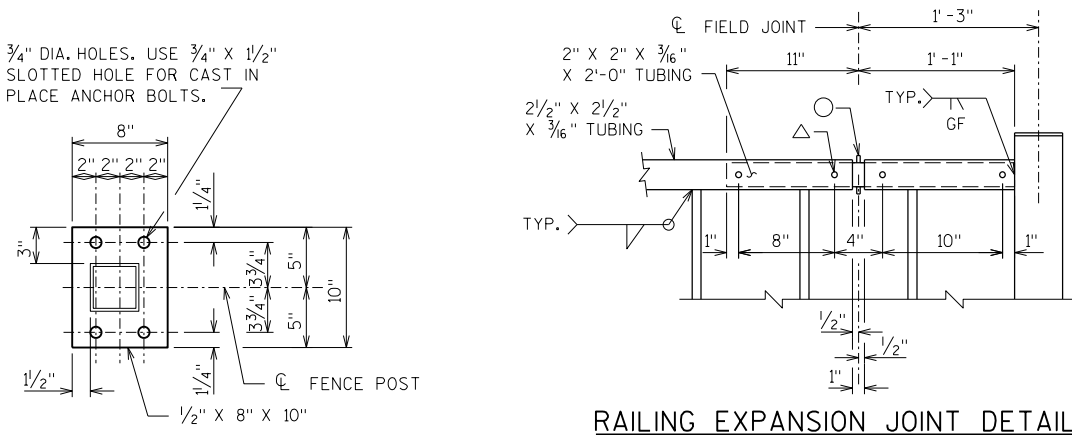
THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

ALL RAILING MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED AMS STD. COLOR NO. 27038 ,BLACK. FENCE FABRIC AND TIES TO BE VINYL-COATED. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

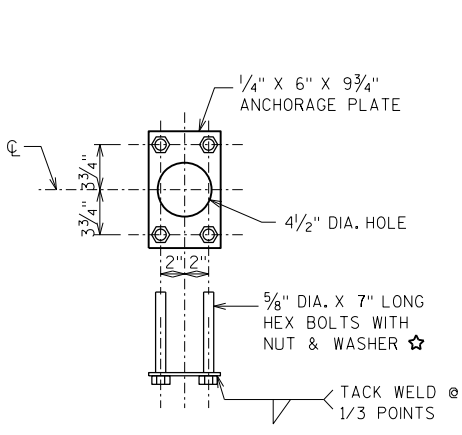


BASE PLATE

RAILING EXPANSION JOINT DETAIL

LEGEND

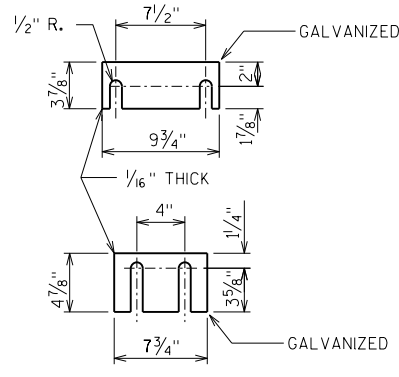
- 5/16" x 3/8" WELDED STUDS
- △ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY INSIDE THE 2 1/2"x 2 1/2" TUBE.



ANCHORAGE DETAIL

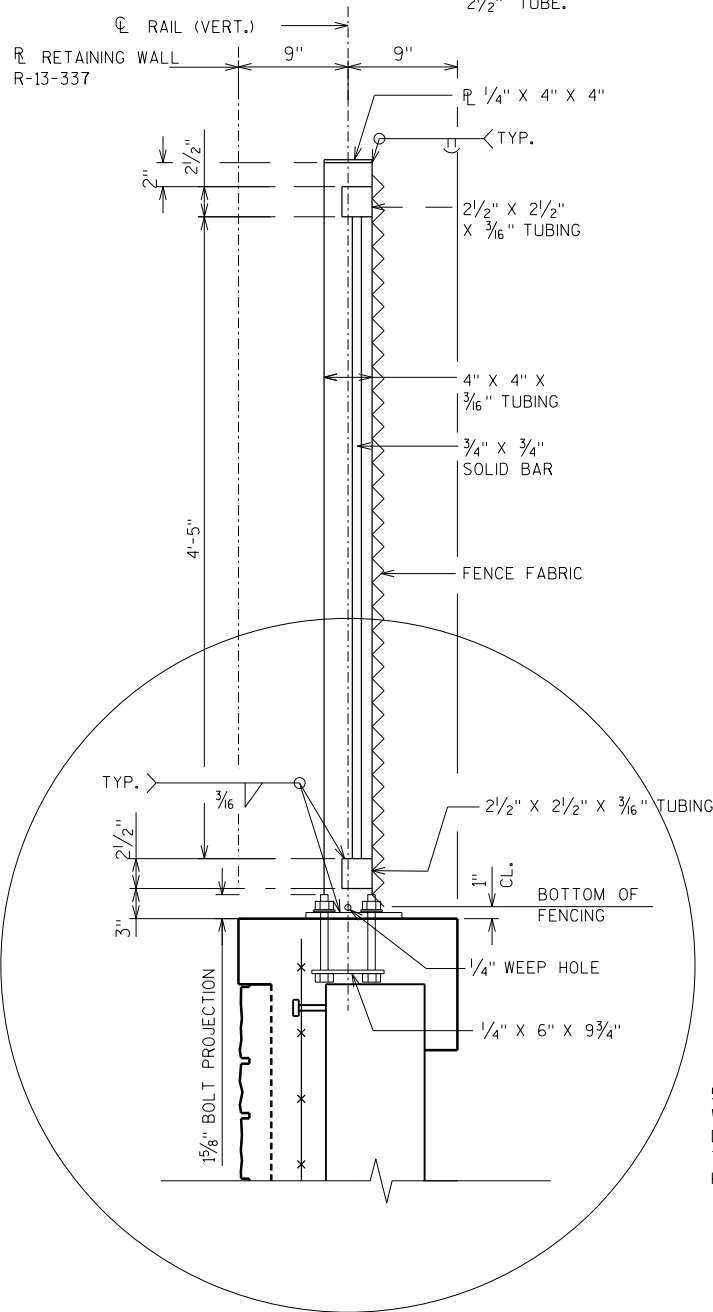
☆ ALTERNATIVE ANCHORAGE: ADHESIVE ANCHORS 5/8"-INCH. EMBED 5" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF WISDOT STANDARD SPECIFICATIONS.

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.

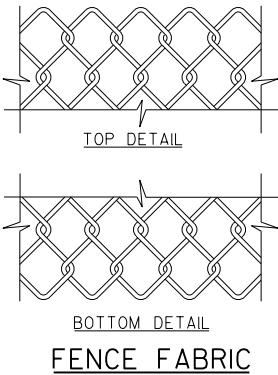


SHIM PLATE DETAILS

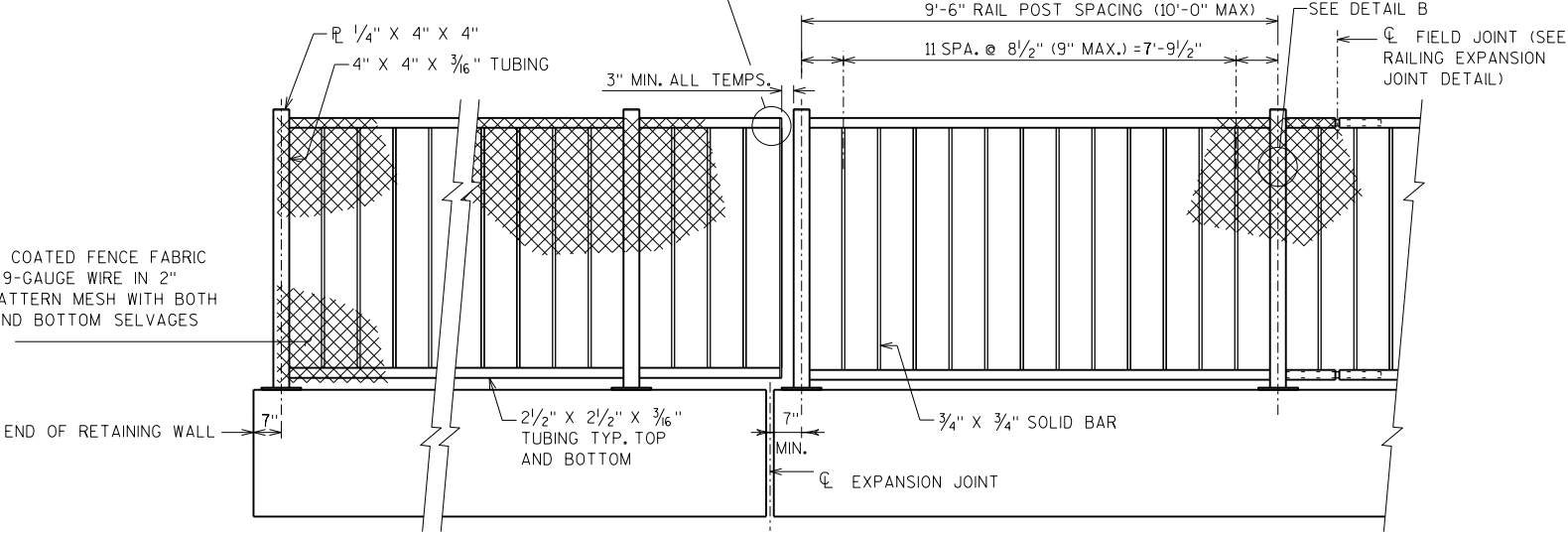
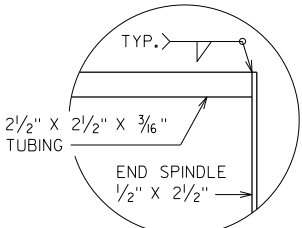
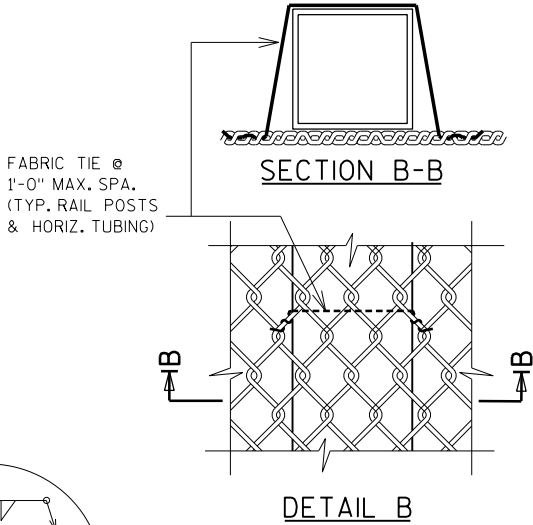
TWO SHIMS OF EACH SIZE
REQUIRED PER POST



SECTION THRU RAILING



FENCE FABRIC



INSIDE ELEVATION OF RAILING