

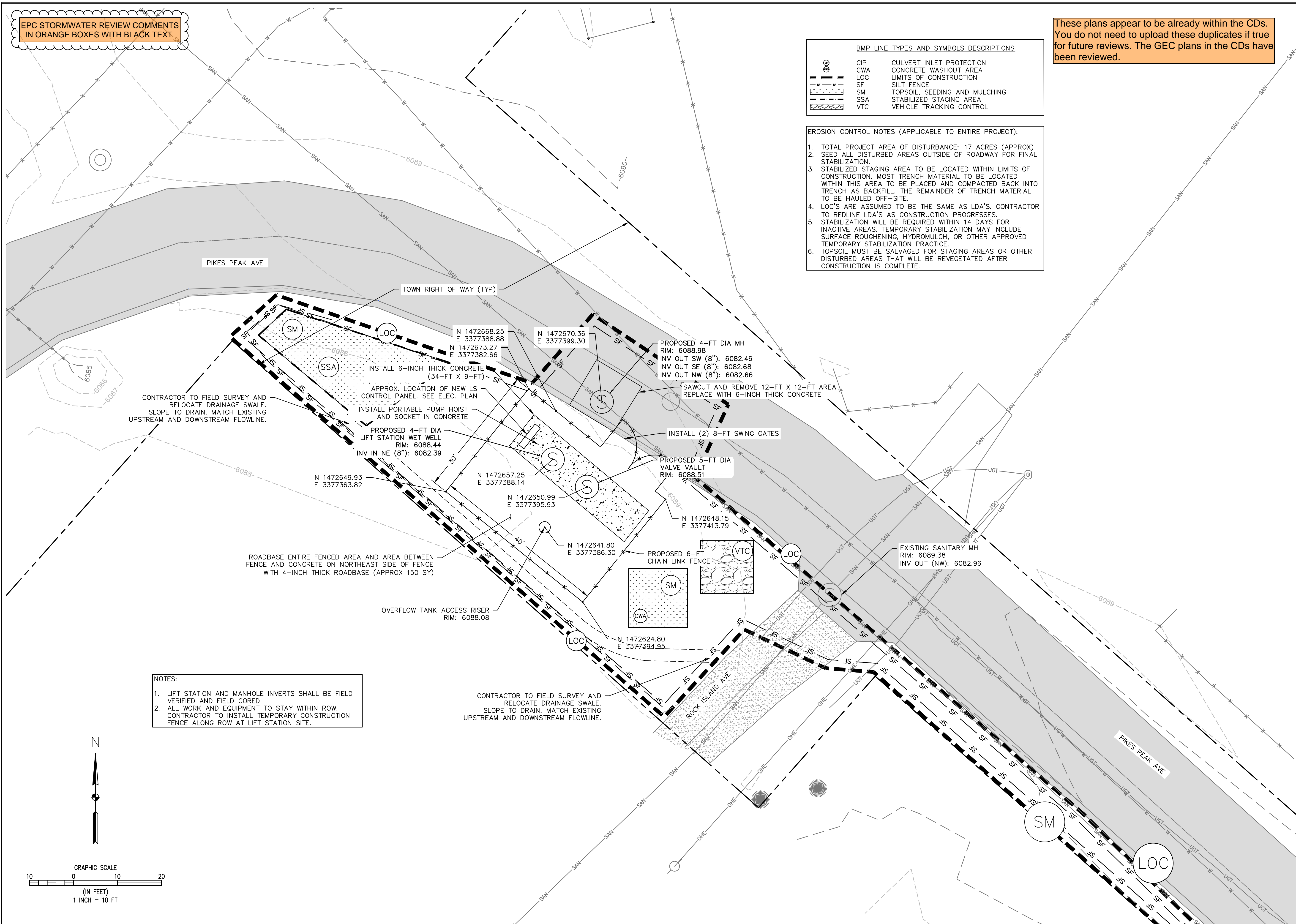
EPC STORMWATER REVIEW COMMENTS
IN ORANGE BOXES WITH BLACK TEXT

These plans appear to be already within the CDs.
You do not need to upload these duplicates if true
for future reviews. The GEC plans in the CDs have
been reviewed.

BMP LINE TYPES AND SYMBOLS DESCRIPTIONS

	CIP	CULVERT INLET PROTECTION
	CWA	CONCRETE WASHOUT AREA
	LOC	LIMITS OF CONSTRUCTION
	SF	SILT FENCE
	SM	TOPSOIL, SEEDING AND MULCHING
	SSA	STABILIZED STAGING AREA
	VTC	VEHICLE TRACKING CONTROL

- EROSION CONTROL NOTES (APPLICABLE TO ENTIRE PROJECT):**
- TOTAL PROJECT AREA OF DISTURBANCE: 17 ACRES (APPROX)
 - SEED ALL DISTURBED AREAS OUTSIDE OF ROADWAY FOR FINAL STABILIZATION.
 - STABILIZED STAGING AREA TO BE LOCATED WITHIN LIMITS OF CONSTRUCTION. MOST TRENCH MATERIAL TO BE LOCATED WITHIN THIS AREA TO BE PLACED AND COMPACTED BACK INTO TRENCH AS BACKFILL. THE REMAINDER OF TRENCH MATERIAL TO BE HAULED OFF-SITE.
 - LOC'S ARE ASSUMED TO BE THE SAME AS LDA'S. CONTRACTOR TO REDLINE LDA'S AS CONSTRUCTION PROGRESSES.
 - STABILIZATION WILL BE REQUIRED WITHIN 14 DAYS FOR INACTIVE AREAS. TEMPORARY STABILIZATION MAY INCLUDE SURFACE ROUGHENING, HYDROMULCH, OR OTHER APPROVED TEMPORARY STABILIZATION PRACTICE.
 - TOPSOIL MUST BE SALVAGED FOR STAGING AREAS OR OTHER DISTURBED AREAS THAT WILL BE REVEGETATED AFTER CONSTRUCTION IS COMPLETE.



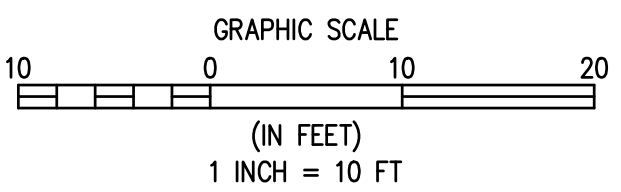
- NOTES:**
- LIFT STATION AND MANHOLE INVERTS SHALL BE FIELD VERIFIED AND FIELD CORED
 - ALL WORK AND EQUIPMENT TO STAY WITHIN ROW. CONTRACTOR TO INSTALL TEMPORARY CONSTRUCTION FENCE ALONG ROW AT LIFT STATION SITE.

CONTRACTOR TO FIELD SURVEY AND RELOCATE DRAINAGE SWALE. SLOPE TO DRAIN. MATCH EXISTING UPSTREAM AND DOWNSTREAM FLOWLINE.

CONTRACTOR TO FIELD SURVEY AND RELOCATE DRAINAGE SWALE. SLOPE TO DRAIN. MATCH EXISTING UPSTREAM AND DOWNSTREAM FLOWLINE.

ROADBASE ENTIRE FENCED AREA AND AREA BETWEEN FENCE AND CONCRETE ON NORTHEAST SIDE OF FENCE WITH 4-INCH THICK ROADBASE (APPROX 150 SY)

OVERFLOW TANK ACCESS RISER
RIM: 6088.08



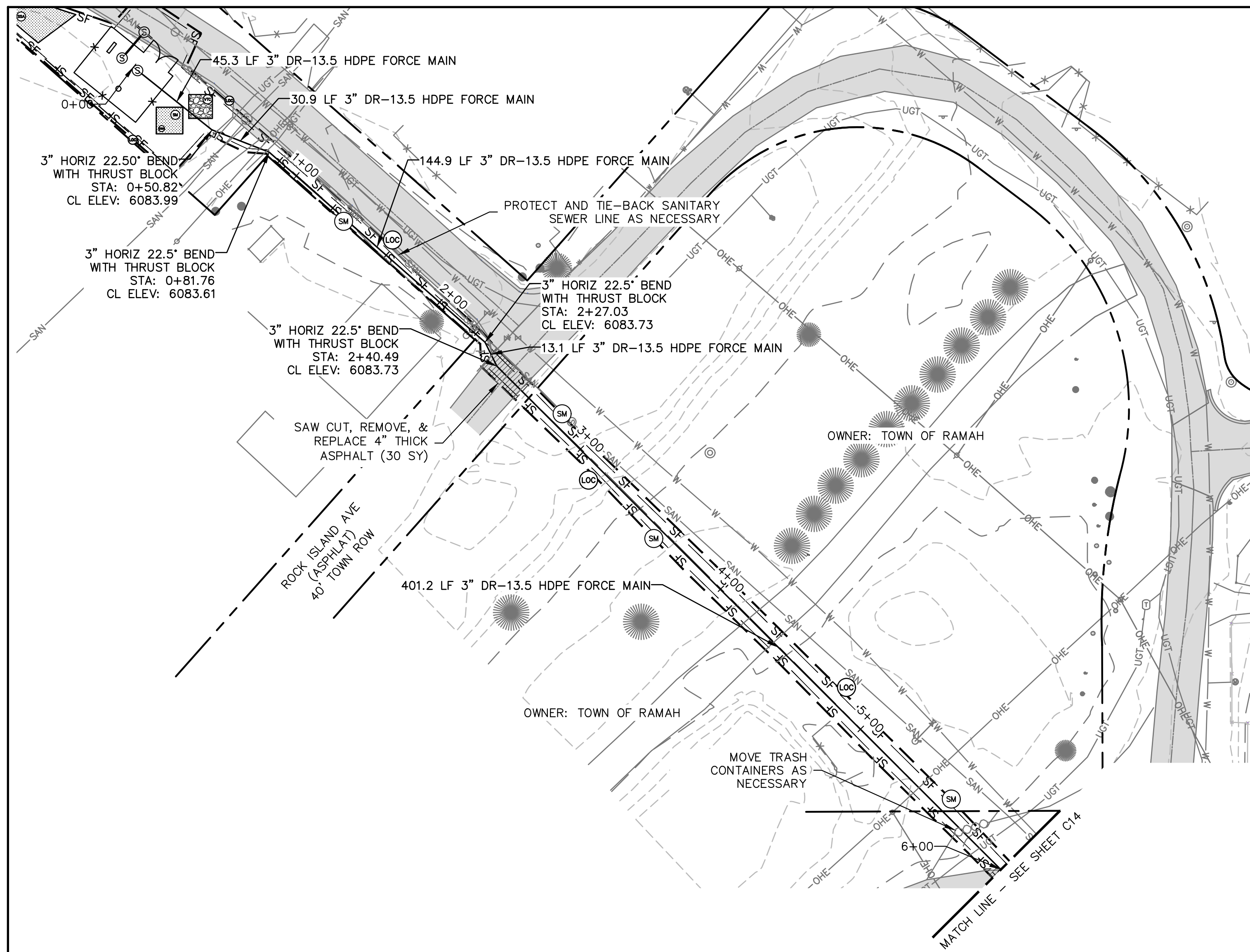
NO.	REVISIONS	DESCRIPTION	DATE	BY

WASTEWATER TREATMENT PLANT
LIFT STATION SITE PLAN
TOWN OF RAMA
113 S. COMMERCIAL STREET
RAMA, CO 80832

PREPARED UNDER THE DIRECT SUPERVISION OF

DATE	OCTOBER 2022
JOB NUMBER	0043.0001
SCALE	1" = 10'
EDITION	
PERMITTING	
SHEET	C9 OF C29

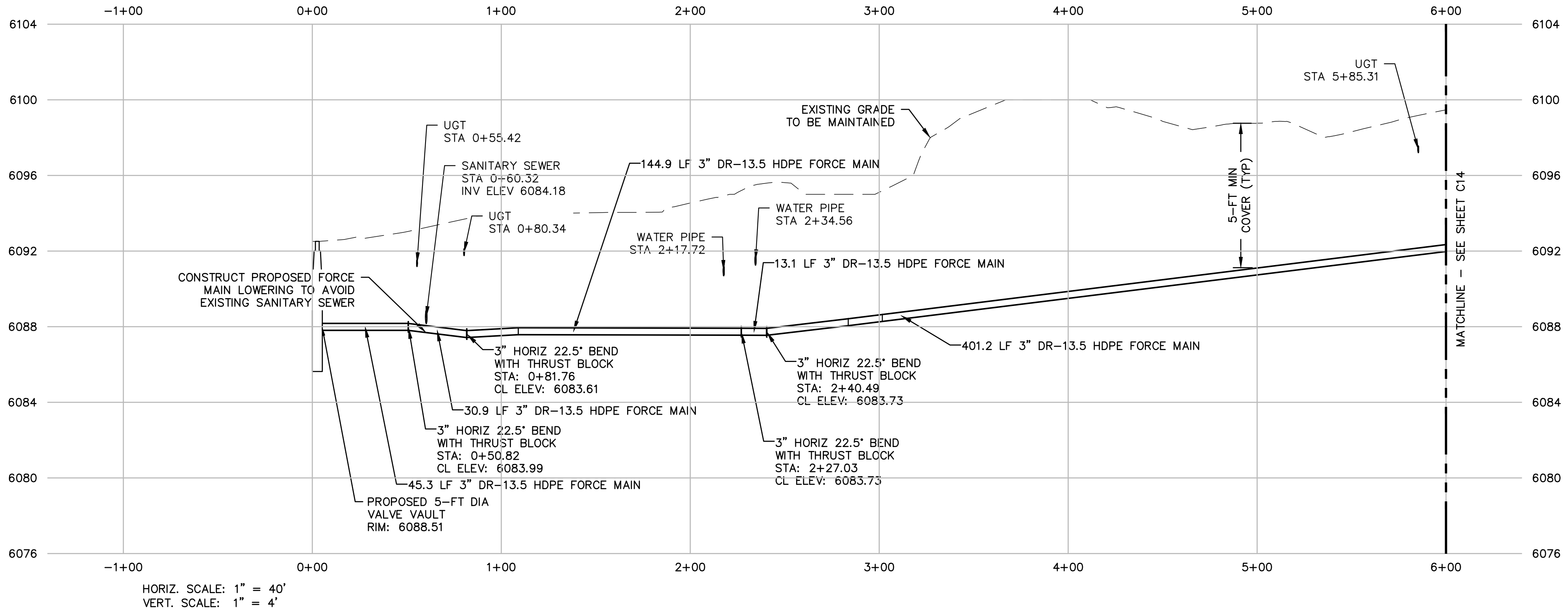
ELEMENT ENGINEERING LLC
12687 W. CEDAR DRIVE, SUITE 300
LAKEWOOD, CO 80228
720.749.4165
WWW.ELEMENTENGINEERING.NET



BMP LINE TYPES AND SYMBOLS DESCRIPTIONS	
	CIP CULVERT INLET PROTECTION
	CWA CONCRETE WASHOUT AREA
	LOC LIMITS OF CONSTRUCTION
	SF SILT FENCE
	SM TOPSOIL SEEDING AND MULCHING
	SSA STABILIZED STAGING AREA
	VTC VEHICLE TRACKING CONTROL

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- NOTES:
- INSTALL 3" IPS DR-13.5 HDPE FORCE MAIN TO MAINTAIN 5-FT TO 6-FT BURY DEPTH WITH TRACER WIRE. INSTALL VERTICAL BENDS AS NECESSARY.
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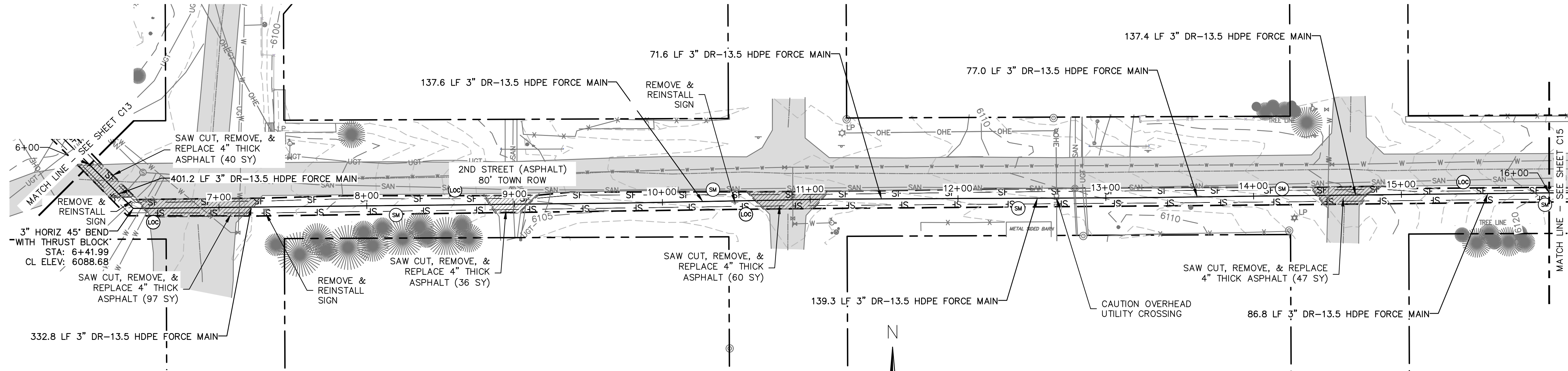
HORIZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

NO.	REVISIONS	DESCRIPTION	DATE	BY

WASTEWATER TREATMENT PLANT
FORCE MAIN PLAN &
PROFILE 0+00 - 6+00
TOWN OF RAMAH
113 S. COMMERCIAL STREET
RAMAH, CO 80832

PREPARED UNDER THE DIRECT SUPERVISION OF

DATE	OCTOBER 2022
JOB NUMBER	0043.0001
SCALE	1" = 40'
EDITION	
PERMITTING	
SHEET	C13 OF C29

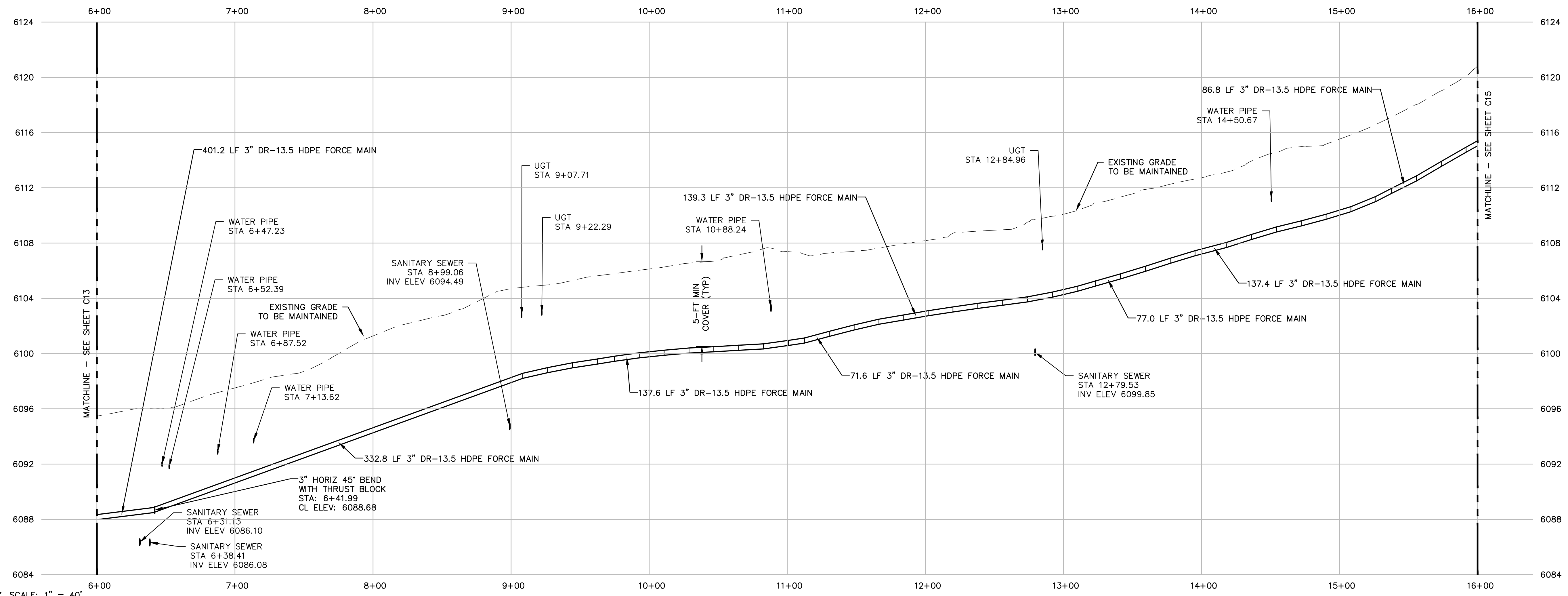
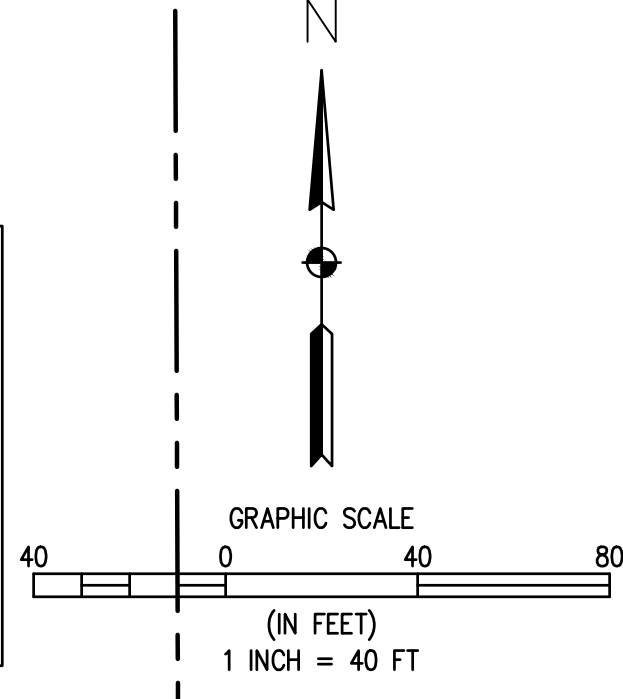


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BMP LINE TYPES AND SYMBOLS DESCRIPTIONS

	CIP	CULVERT INLET PROTECTION
	CWA	CONCRETE WASHOUT AREA
	LOC	LIMITS OF CONSTRUCTION
	SF	SILT FENCE
	SM	TOPSOIL, SEEDING AND MULCHING
	SSA	STABILIZED STAGING AREA
	VTC	VEHICLE TRACKING CONTROL

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VERT. SCALE: 1" = 4'

NO.	REVISIONS	DESCRIPTION	DATE	BY

WASTEWATER TREATMENT PLANT
FORCE MAIN PLAN & PROFILE 6+00 - 16+00
TOWN OF RAMAH
113 S. COMMERCIAL STREET
RAMAH, CO 80832

PREPARED UNDER THE DIRECT SUPERVISION OF
FOR AND ON BEHALF OF
ELEMENT ENGINEERING, LLC
DATE
OCTOBER 2022
JOB NUMBER
0043.0001
SCALE
1" = 40'
EDITION
PERMITTING
SHEET
C14 OF C29

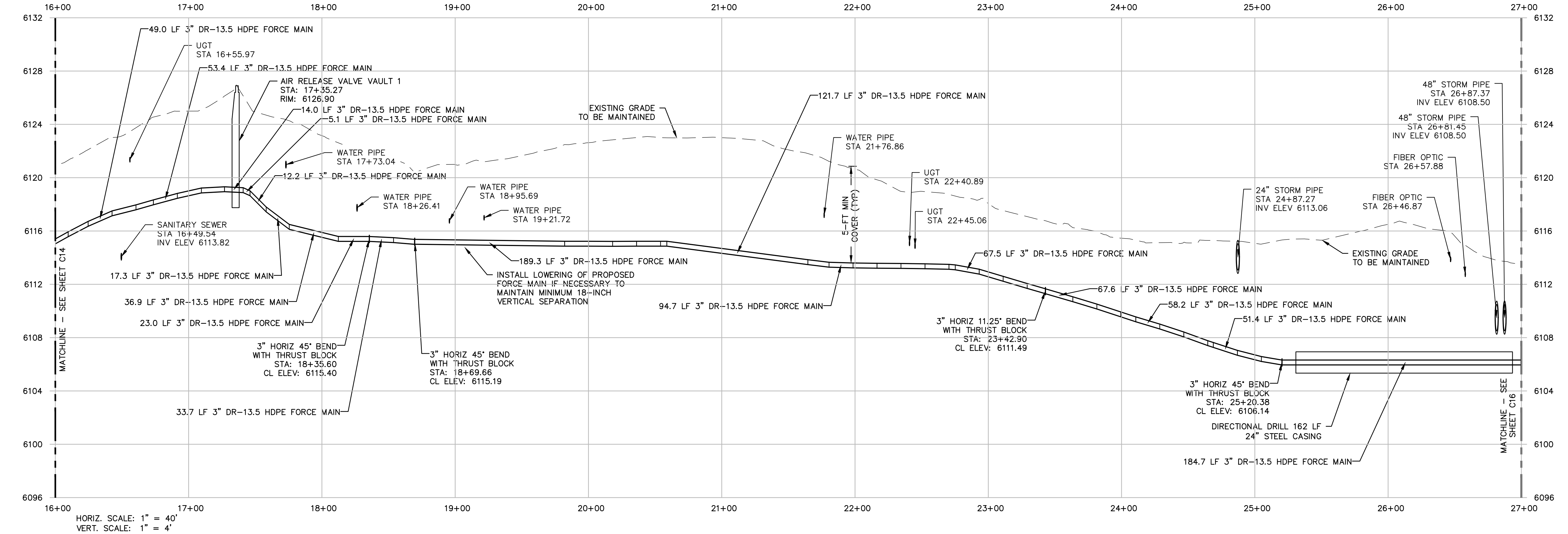
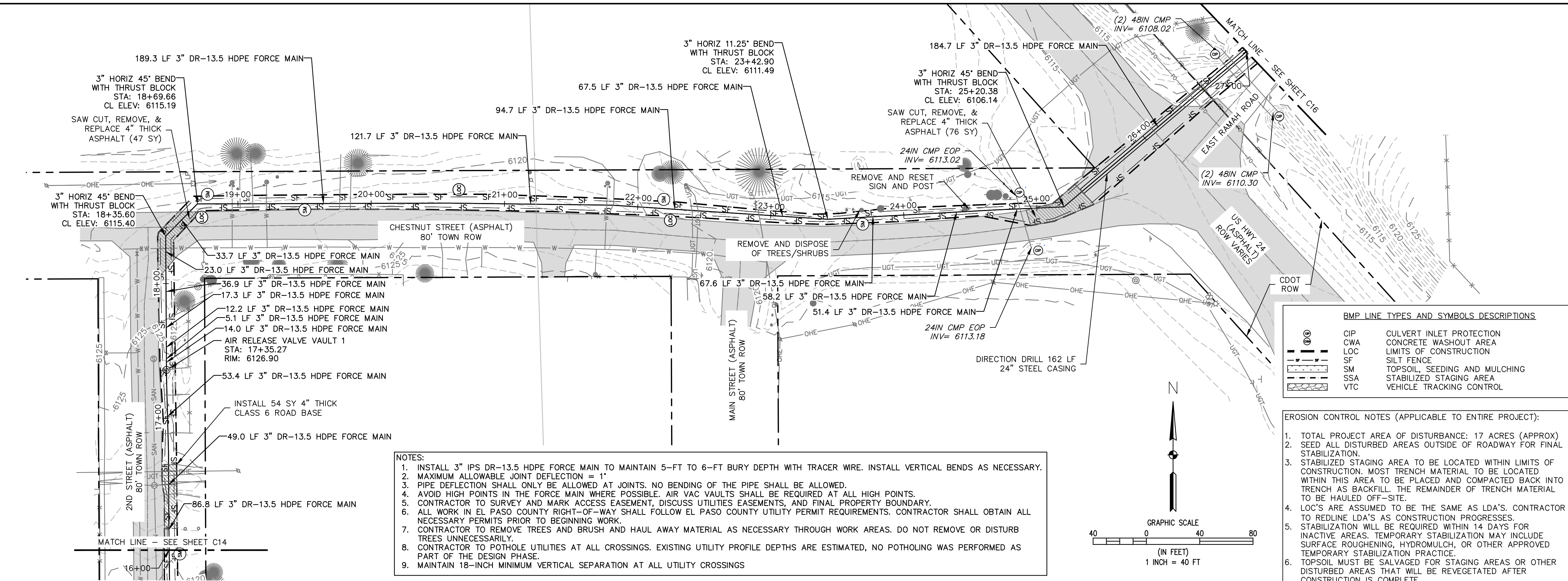
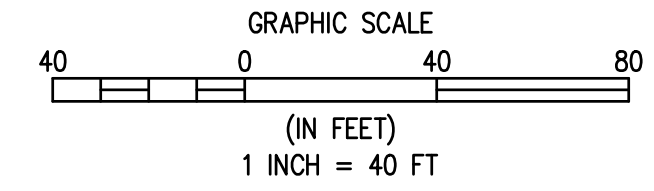


BMP LINE TYPES AND SYMBOLS DESCRIPTIONS

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NO.	REVISIONS	DESCRIPTION	DATE	BY

WASTEWATER TREATMENT PLANT
FORCE MAIN PLAN & PROFILE
16+00 - 27+00
TOWN OF RAMAH
113 S. COMMERCIAL STREET
RAMAH, CO 80832

PREPARED UNDER THE DIRECT SUPERVISION OF

FOR AND ON BEHALF OF
ELEMENT ENGINEERING, LLC

DATE
OCTOBER 2022

JOB NUMBER
0043.0001

SCALE
AS SHOWN

EDITION
PERMITTING

SHEET
C15 OF C29

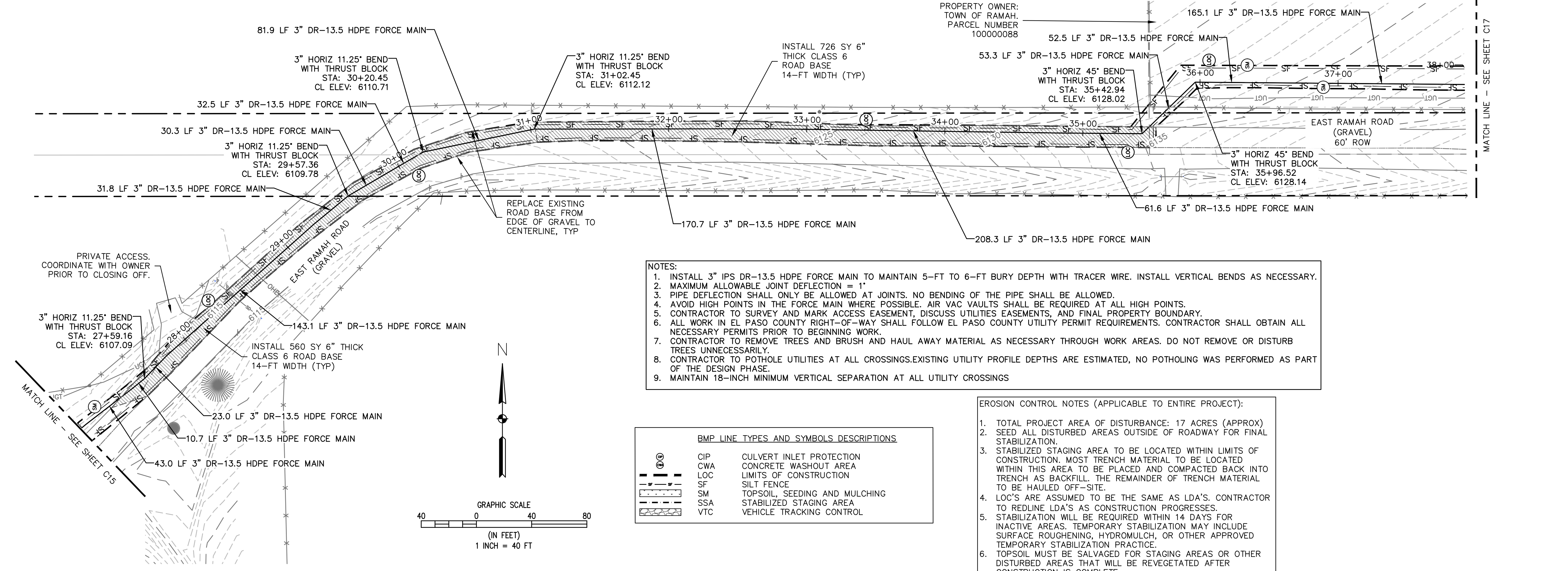


NO.	DATE	DESCRIPTION

WASTEWATER TREATMENT PLANT
FORCE MAIN PLAN & PROFILE 27+00 - 38+00
 TOWN OF RAMAH
 113 S. COMMERCIAL STREET
 RAMAH, CO 80832

FOR AND ON BEHALF OF
 ELEMENT ENGINEERING, LLC
 DATE: **OCTOBER 2022**
 JOB NUMBER: **0043.0001**
 SCALE: **1" = 40'**
 EDITION: **PERMITTING**
 SHEET: **C16** OF **C29**

PROPERTY OWNER:
 TOWN OF RAMAH
 PARCEL NUMBER
 10000088

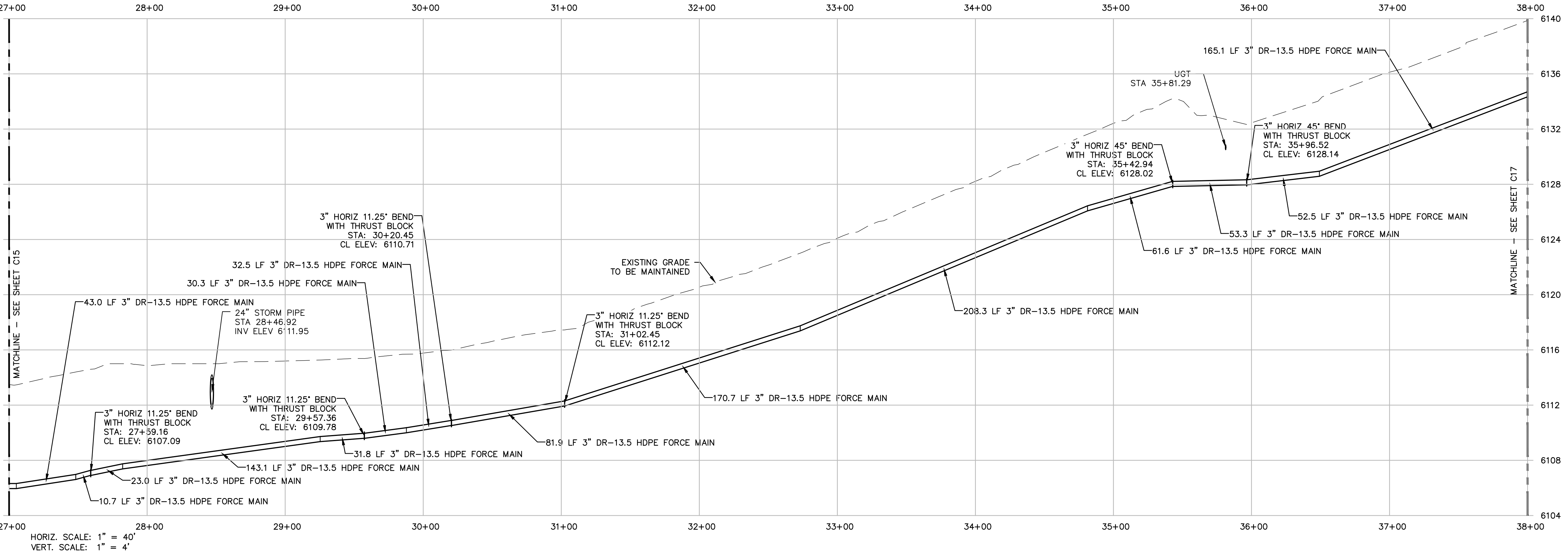
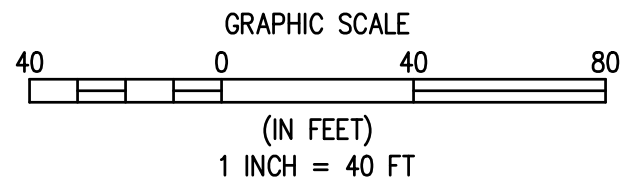


- NOTES:**
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	CIP	CULVERT INLET PROTECTION
	CWA	CONCRETE WASHOUT AREA
	LOC	LIMITS OF CONSTRUCTION
	SF	SILT FENCE
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	SSA	STABILIZED STAGING AREA
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HORIZ. SCALE: 1" = 40'
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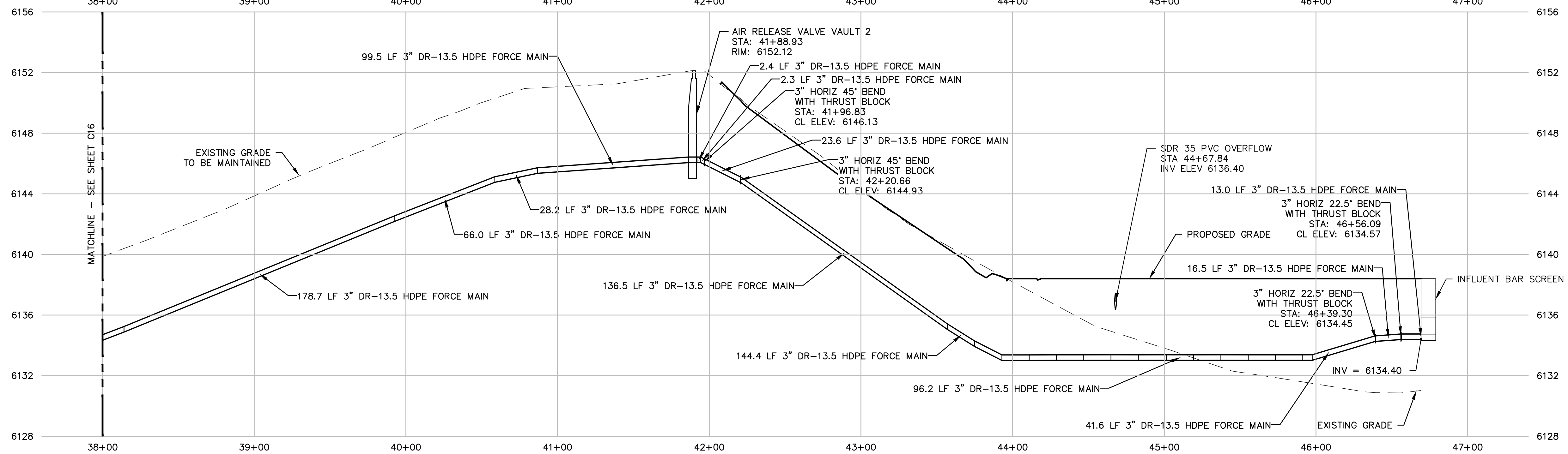
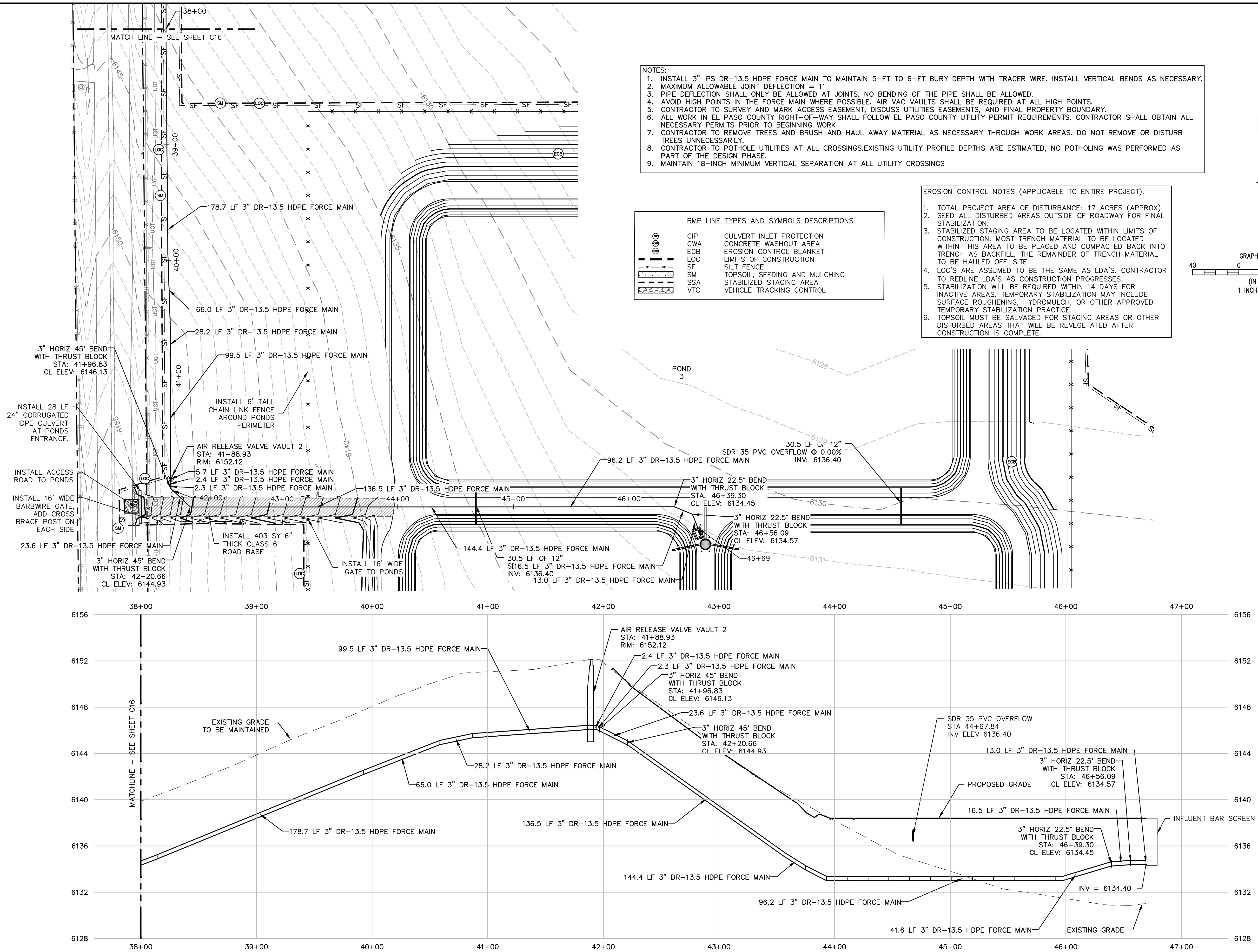
GRAPHIC SCALE
(IN FEET)
1 INCH = 40 FT

- NOTES:**
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BMP LINE TYPES AND SYMBOLS DESCRIPTIONS

	CIP	CULVERT INLET PROTECTION
	CWA	CONCRETE WASHOUT AREA
	ECB	EROSION CONTROL BLANKET
	LOC	LIMITS OF CONSTRUCTION
	SF	SILT FENCE
	SM	TOPSOIL, SEEDING AND MULCHING
	SSA	STABILIZED STAGING AREA
	VTC	VEHICLE TRACKING CONTROL



NO.	DATE	BY	DESCRIPTION

WASTEWATER TREATMENT PLANT
**FORCE MAIN PLAN &
 PROFILE 38+00 - 46+75**
 TOWN OF RAMAH
 113 S. COMMERCIAL STREET
 RAMAH, CO 80832

PREPARED UNDER THE DIRECT SUPERVISION OF

DATE	OCTOBER 2022
JOB NUMBER	0043.0001
SCALE	1" = 40'
EDITION	PERMITTING
SHEET	C17 OF C29

- NOTES:
 1. CONTRACTOR TO STRIP TOP 6" OF EXISTING MATERIAL AND VEGETATION AND DISPOSE OF OFF-SITE.

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C1	65.97'	42.00'	90°00'00"	N43°52'52"E	59.50'
C2	65.97'	42.00'	90°00'00"	S46°07'08"E	59.50'
C3	49.59'	56.00'	50°44'10"	S25°22'05"E	47.98'
C4	66.76'	42.50'	90°00'00"	S45°00'00"E	60.10'
C5	65.97'	42.00'	90°00'00"	S43°52'52"W	59.50'
C6	65.97'	42.00'	90°00'00"	S46°07'08"W	59.50'
C7	65.97'	42.00'	90°00'00"	S43°52'52"W	59.50'
C8	65.97'	42.00'	90°00'00"	S46°07'08"W	59.50'
C9	65.97'	42.00'	90°00'00"	S46°07'08"W	59.50'

ESTIMATED CUT/FILL QUANTITIES
 CUT (EST): 49,781 CY
 FILL (EST): 38,341 CY (1.15 COMPACTION FACTOR)
 TOP SOIL REMOVAL (EST): 9,916 CY

ESTIMATED POND LINER
 POND LINER (EST): 402,446 SF

NOTE: CUT, FILL, AND POND LINER ARE BID AS LUMP SUM. LINER LUMP SUM TO INCLUDE ANCHOR TRENCH, ETC. CONTRACTOR TO VERIFY QUANTITIES FROM CAD FILES PRIOR TO BIDDING.

28 LF 24" CORRUGATED HDPE CULVERT AT PONDS ENTRANCE.

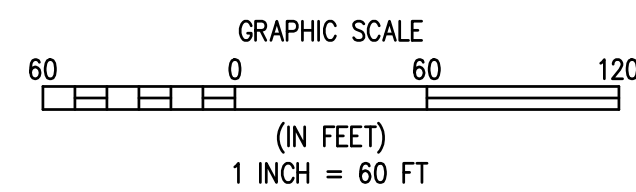
15' WIDE ACCESS ROAD TO PONDS

INSTALL 16' WIDE BARB WIRE GATE, ADD CROSS BRACE POST ON EACH SIDE

START OF DRAINAGE SWALE (DS) SLOPE 1% TO SOUTH

INFLUENT STRUCTURE SEE SHEET C21

END OF DRAINAGE SWALE (DS) SLOPE 1% TO THE EAST

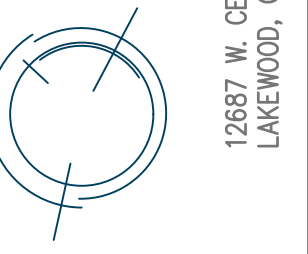
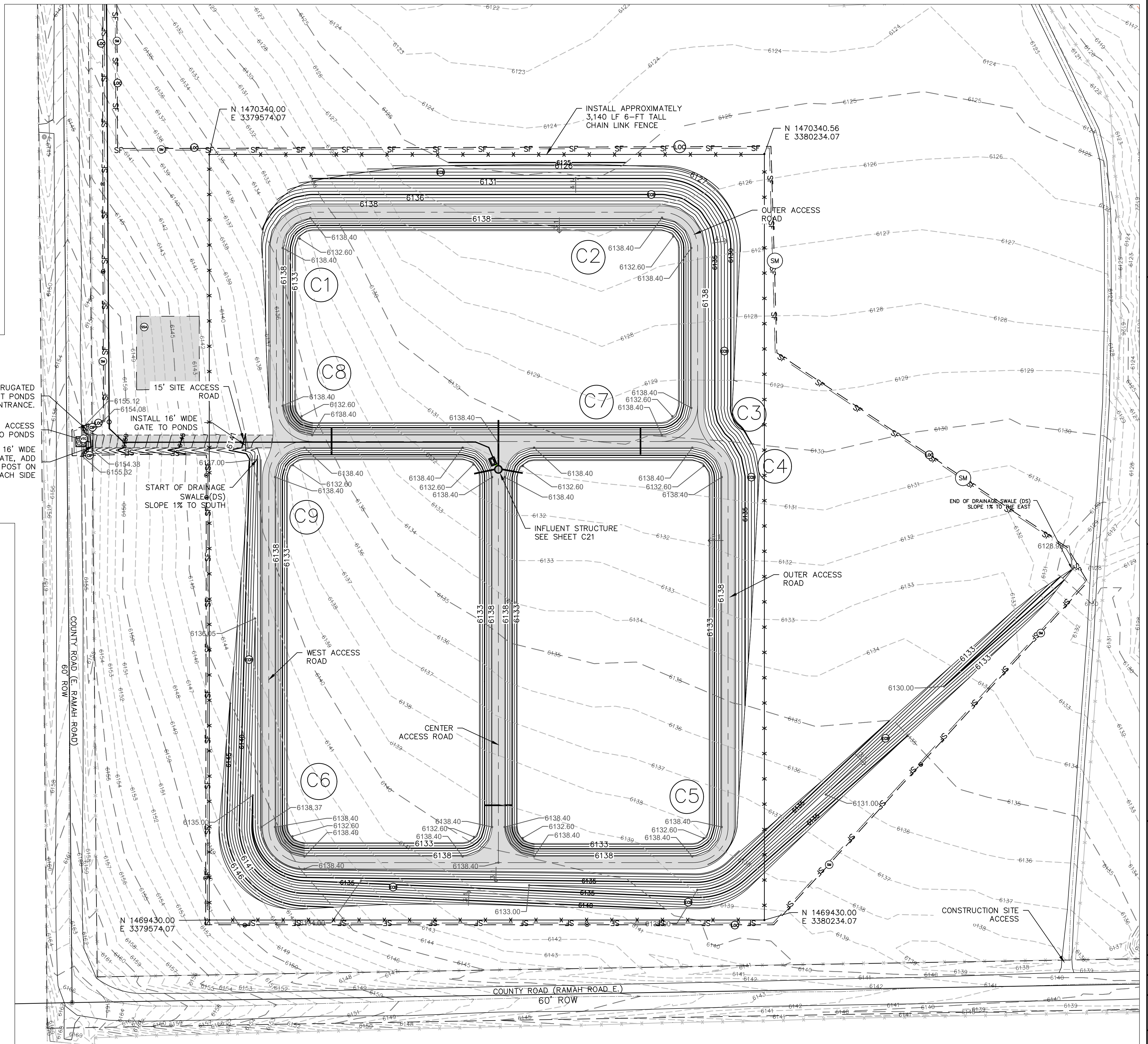


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EROSION CONTROL NOTES (APPLICABLE TO ENTIRE PROJECT):

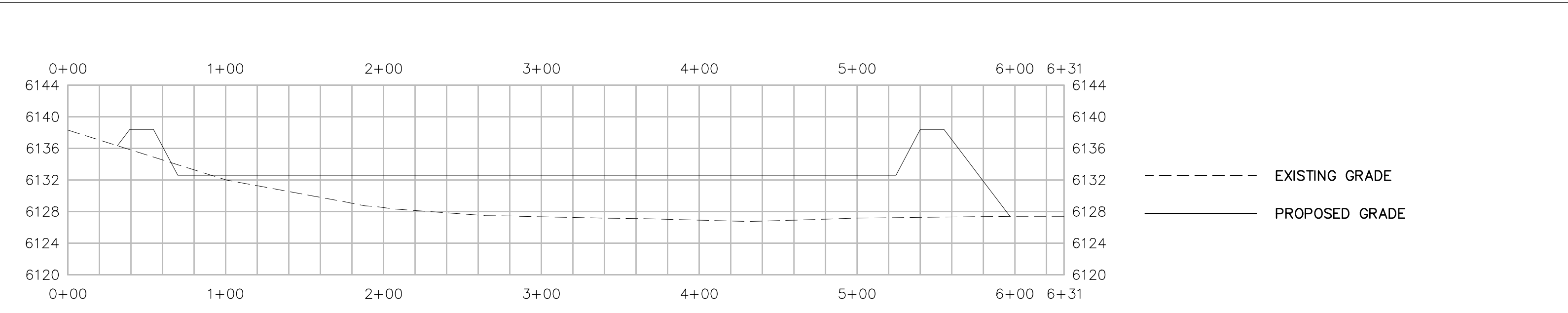
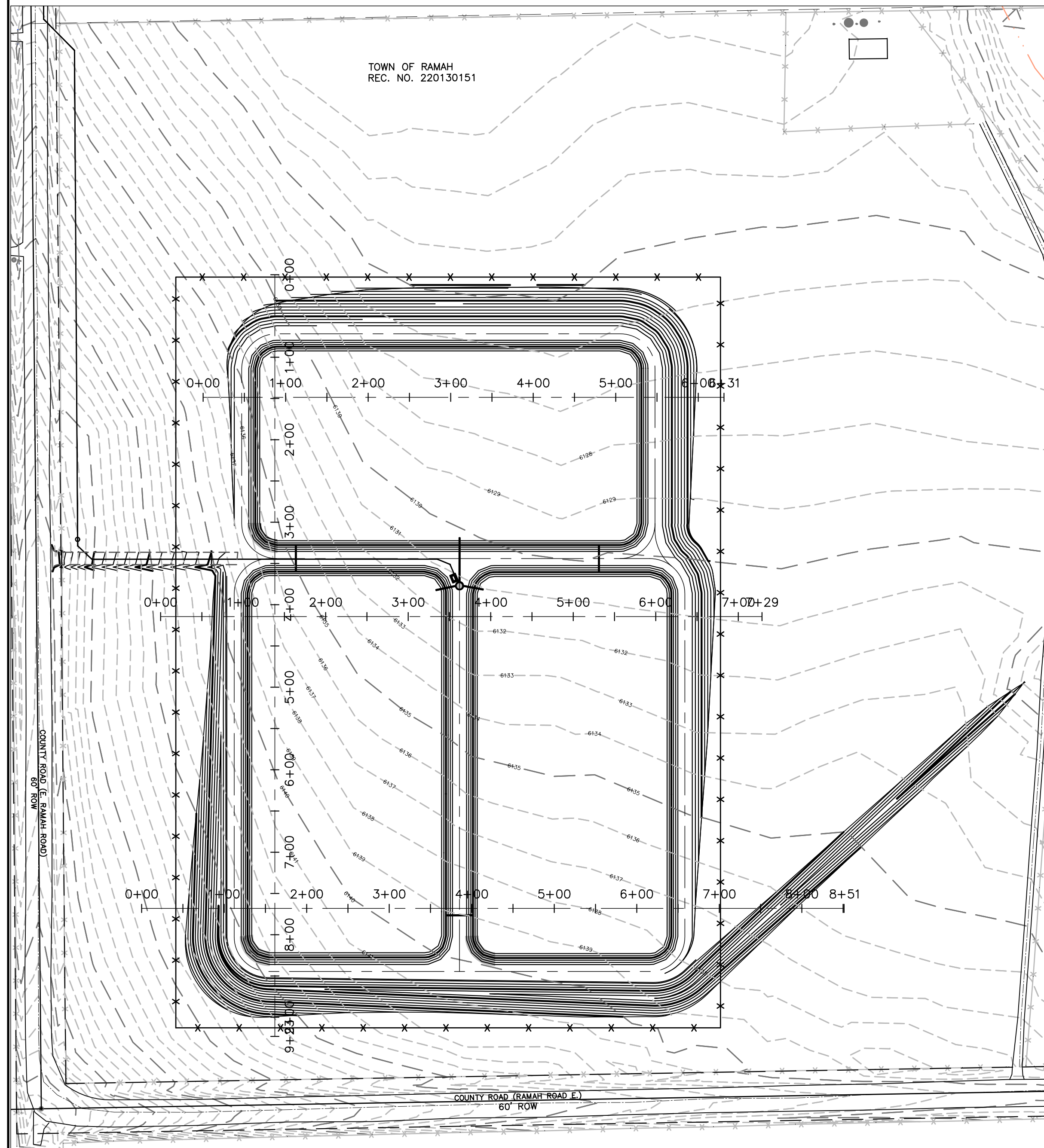
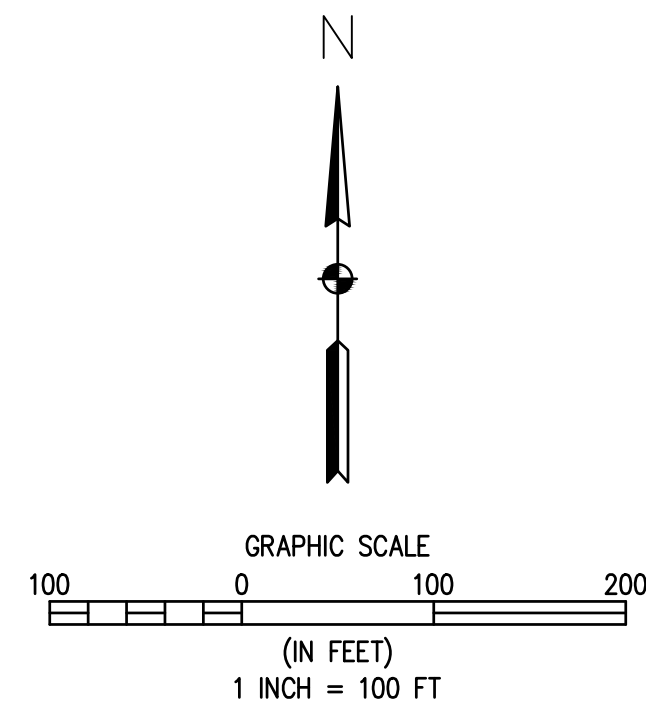
- TOTAL PROJECT AREA OF DISTURBANCE: 17 ACRES (APPROX)
- SEED ALL DISTURBED AREAS OUTSIDE OF ROADWAY FOR FINAL STABILIZATION.
- STABILIZED STAGING AREA TO BE LOCATED WITHIN LIMITS OF CONSTRUCTION. MOST TRENCH MATERIAL TO BE LOCATED WITHIN THIS AREA TO BE PLACED AND COMPACTED BACK INTO TRENCH AS BACKFILL. THE REMAINDER OF TRENCH MATERIAL TO BE HAULED OFF-SITE.
- LOC'S ARE ASSUMED TO BE THE SAME AS LDA'S. CONTRACTOR TO REDLINE LDA'S AS CONSTRUCTION PROGRESSES.
- STABILIZATION WILL BE REQUIRED WITHIN 14 DAYS FOR INACTIVE AREAS. TEMPORARY STABILIZATION MAY INCLUDE SURFACE ROUGHENING, HYDROMULCH, OR OTHER APPROVED TEMPORARY STABILIZATION PRACTICE.
- TOPSOIL MUST BE SALVAGED FOR STAGING AREAS OR OTHER DISTURBED AREAS THAT WILL BE REVEGETATED AFTER CONSTRUCTION IS COMPLETE.
- EROSION CONTROL BLANKETS TO BE USED ON ALL SLOPES 3:1 OR GREATER



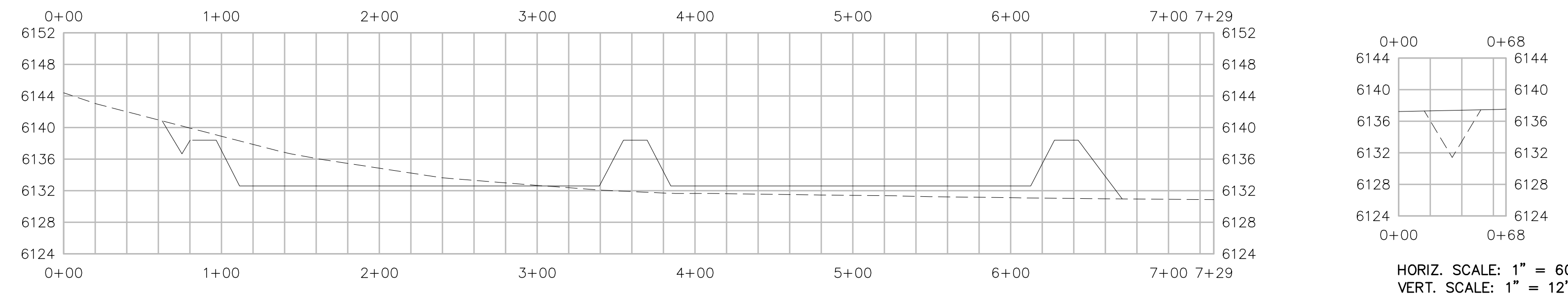
NO.	DATE	DESCRIPTION

WASTEWATER TREATMENT PLANT &
 HORIZONTAL CONTROL &
 GRADING
 TOWN OF RAMAH
 113 S. COMMERCIAL STREET
 RAMAH, CO 80832

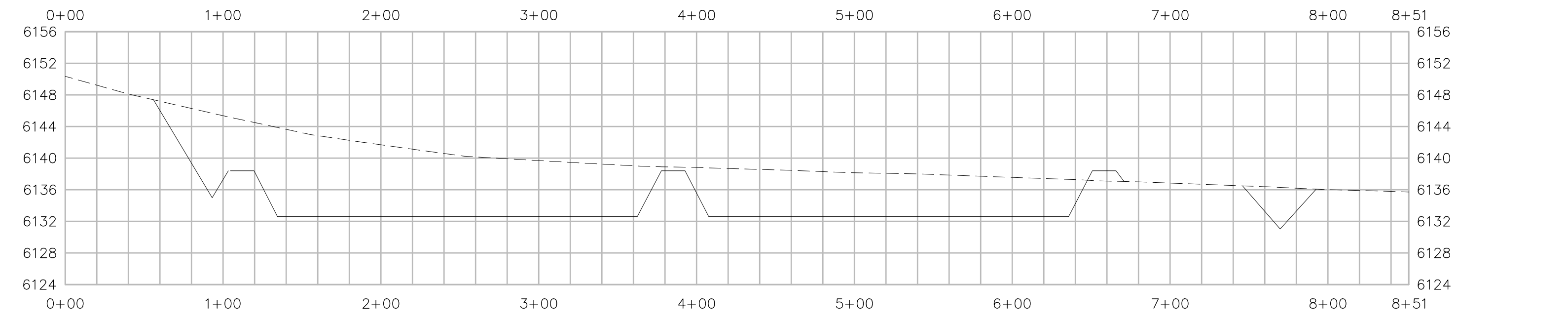
DATE	OCTOBER 2022
JOB NUMBER	0043.0001
SCALE	1" = 60'
EDITION	PERMITTING
SHEET	C20 OF C29



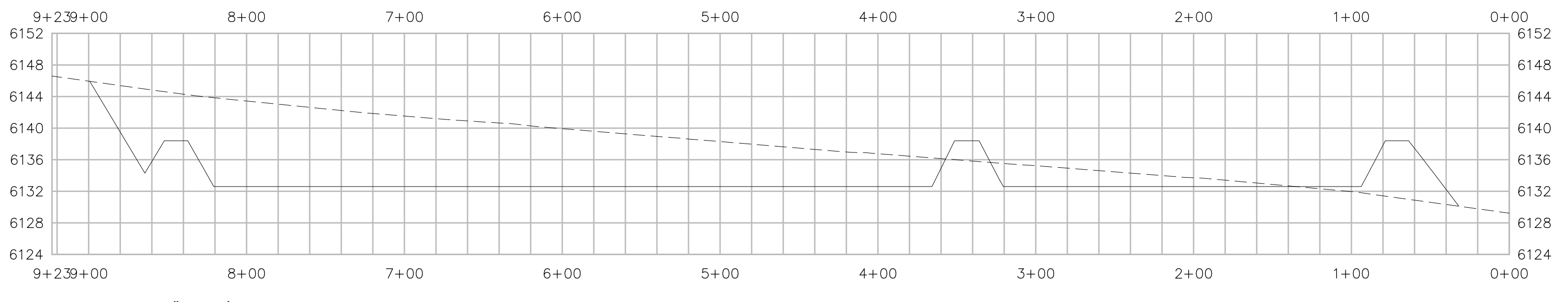
HORIZ. SCALE: 1" = 60'
VERT. SCALE: 1" = 12'



HORIZ. SCALE: 1" = 60'
VERT. SCALE: 1" = 12'



HORIZ. SCALE: 1" = 60'
VERT. SCALE: 1" = 12'



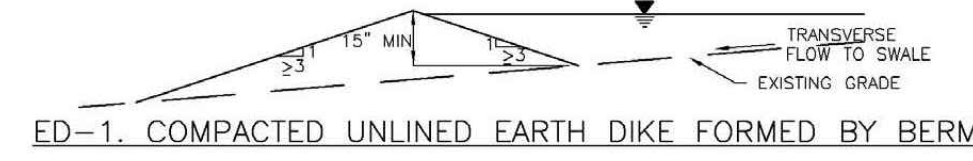
HORIZ. SCALE: 1" = 60'
VERT. SCALE: 1" = 12'

NO.	REVISIONS	DESCRIPTION	DATE	BY

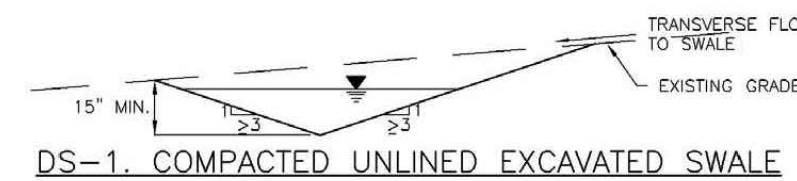
WASTEWATER TREATMENT PLANT
POND GRADING PROFILES
TOWN OF RAMAH
113 S. COMMERCIAL STREET
RAMAH, CO 80832

PREPARED UNDER THE DIRECT SUPERVISION OF
DATE: OCTOBER 2022
JOB NUMBER: 0043.0001
SCALE: 1" = 100'
EDITION: PERMITTING
SHEET: C21 OF C29

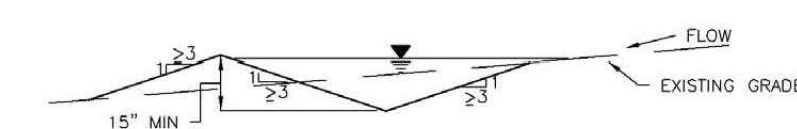
Earth Dikes and Drainage Swales (ED/DS) EC-10



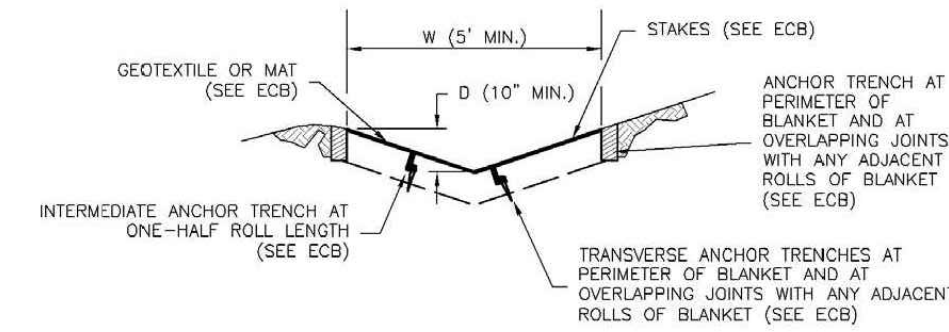
ED-1. COMPACTED UNLINED EARTH DIKE FORMED BY BERM



DS-1. COMPACTED UNLINED EXCAVATED SWALE



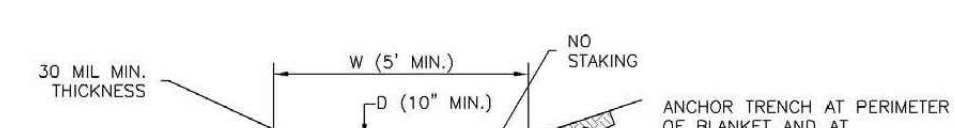
DS-2. COMPACTED UNLINED SWALE FORMED BY CUT AND FILL



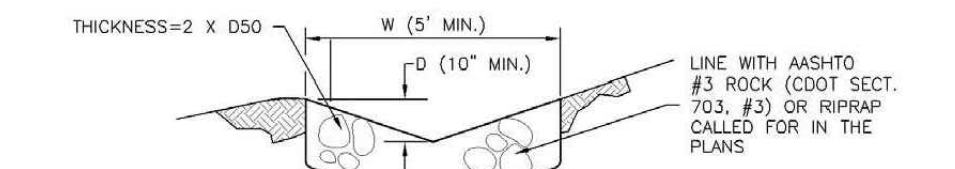
DS-3. ECB LINED SWALE (CUT AND FILL OR BERM)

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EC-10 Earth Dikes and Drainage Swales (ED/DS)

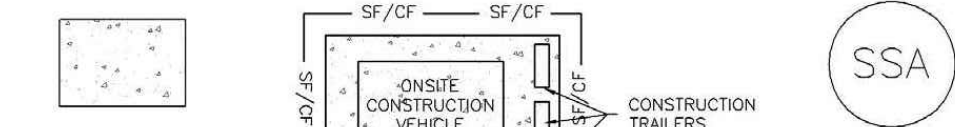


DS-4. SYNTHETIC LINED SWALE



DS-5. RIPRAP LINED SWALE

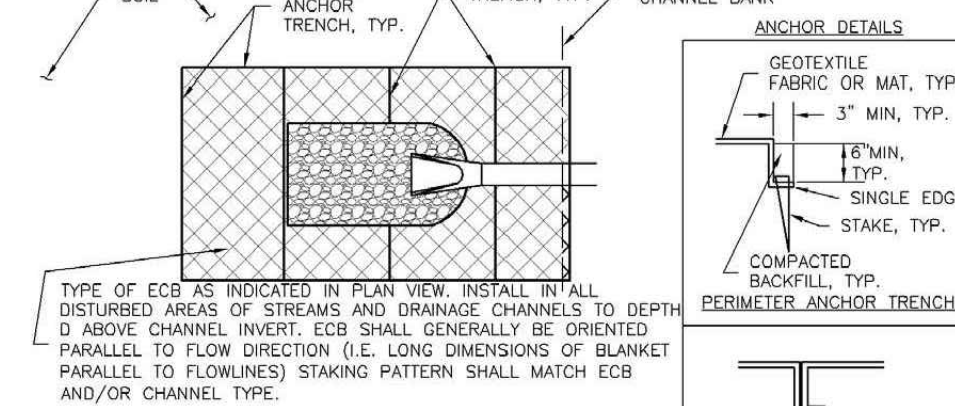
Stabilized Staging Area (SSA) SM-6



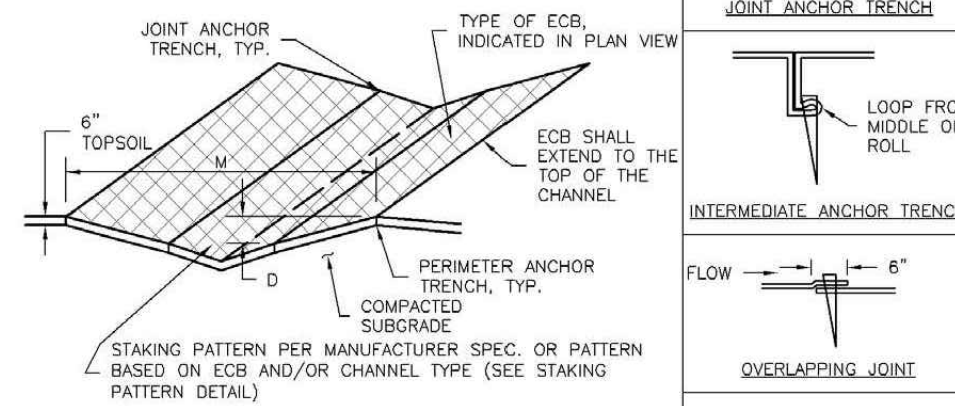
SSA-1. STABILIZED STAGING AREA

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EC-6 Rolled Erosion Control Products (RECP)



ECB-1. PIPE OUTLET TO DRAINAGE WAY



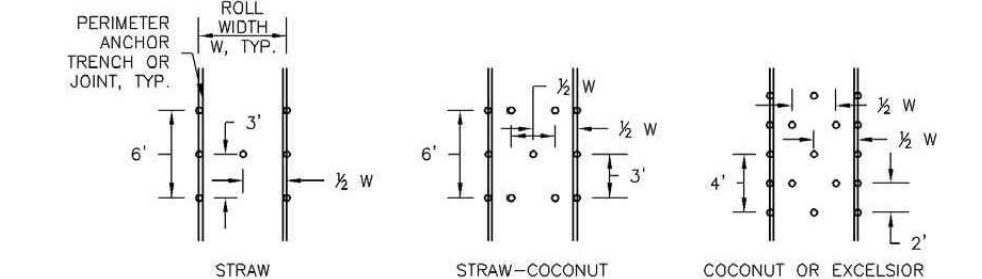
ECB-2. SMALL DITCH OR DRAINAGE WAY

RECP-6 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3

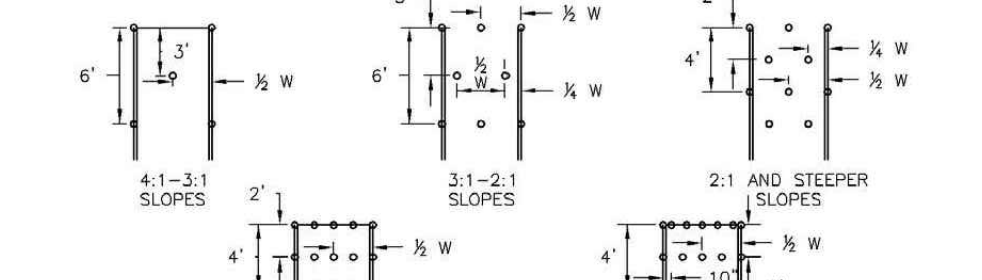
Rolled Erosion Control Products (RECP) EC-6



ECB-3. OUTSIDE OF DRAINAGE WAY



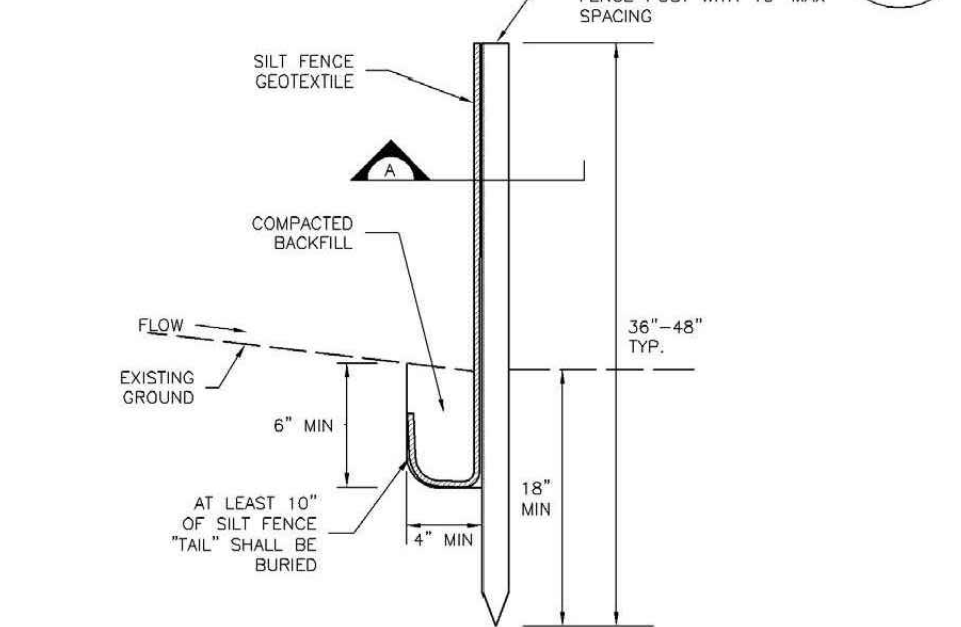
STAKING PATTERNS BY SLOPE OR CHANNEL TYPE



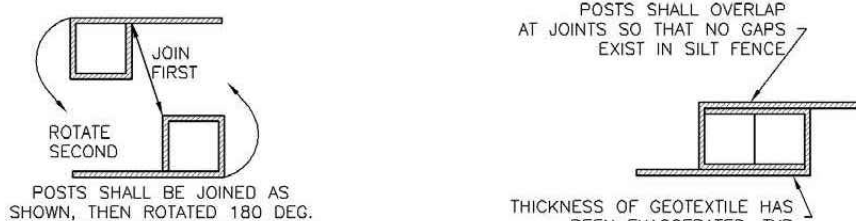
STAKING PATTERNS BY SLOPE OR CHANNEL TYPE

November 2010 Urban Drainage and Flood Control District RECP-7
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Silt Fence (SF) SC-1



SILT FENCE

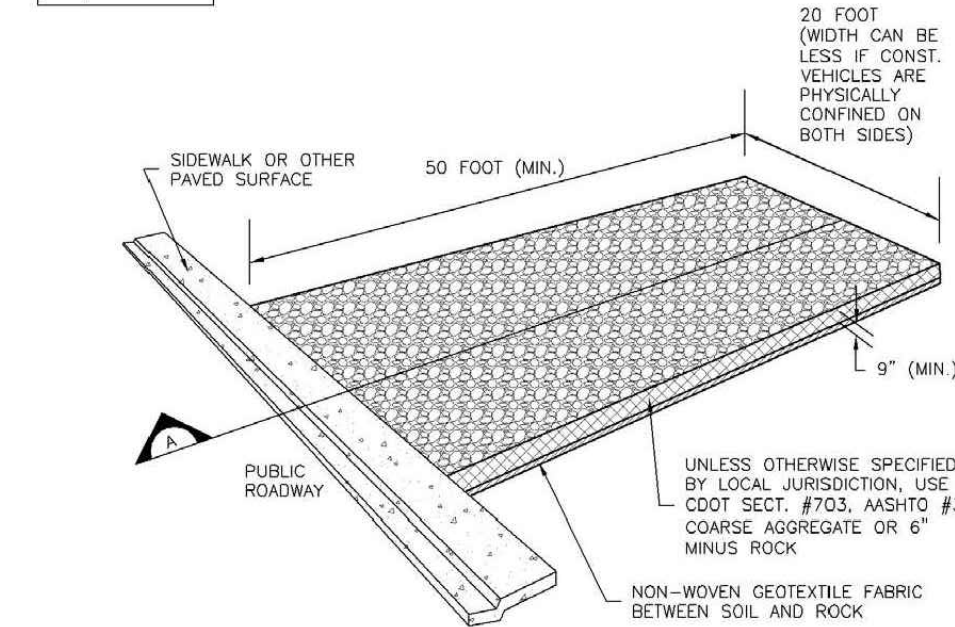


SECTION A

SF-1. SILT FENCE

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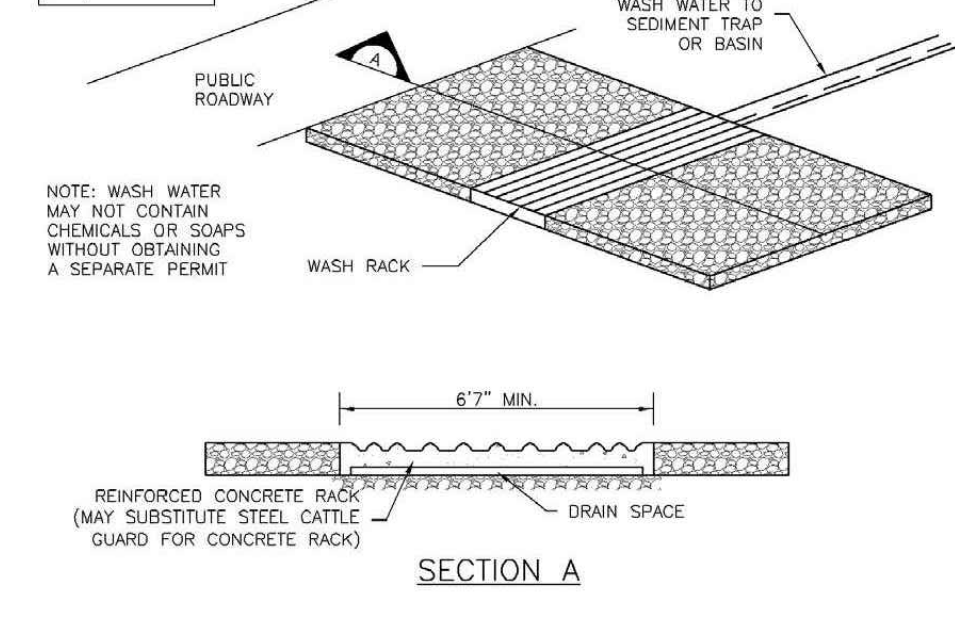
Vehicle Tracking Control (VTC) SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

November 2010 Urban Drainage and Flood Control District VTC-3
Urban Storm Drainage Criteria Manual Volume 3

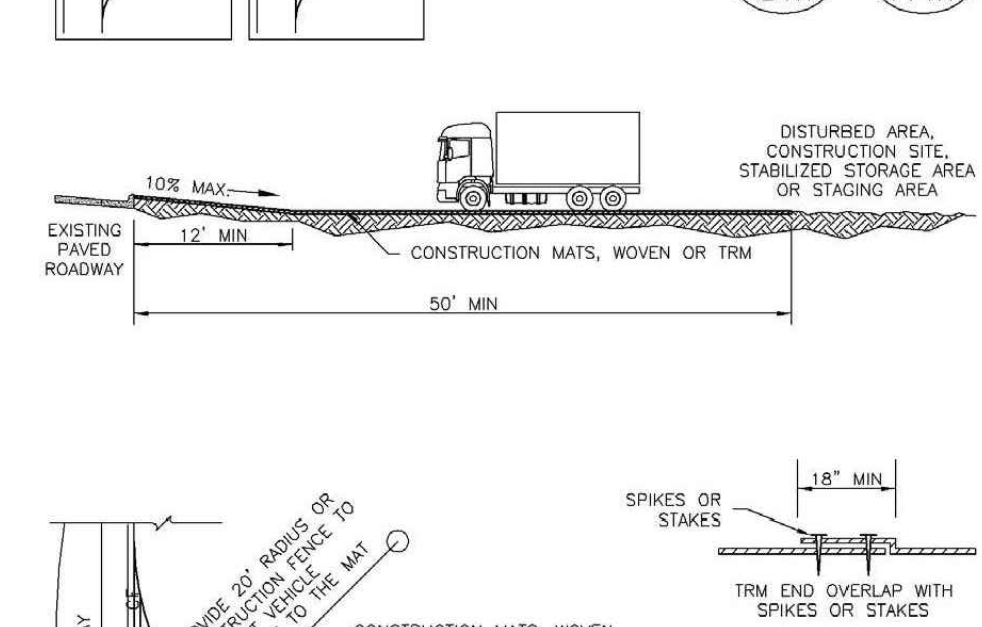
SM-4 Vehicle Tracking Control (VTC)



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

VTC-4 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3

Vehicle Tracking Control (VTC) SM-4



VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

November 2010 Urban Drainage and Flood Control District VTC-5
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NO.	REVISIONS	DATE	BY