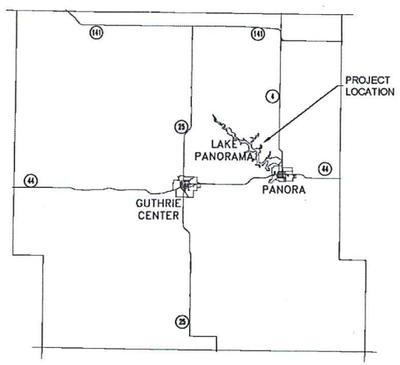
CREP WETLAND PROJECT

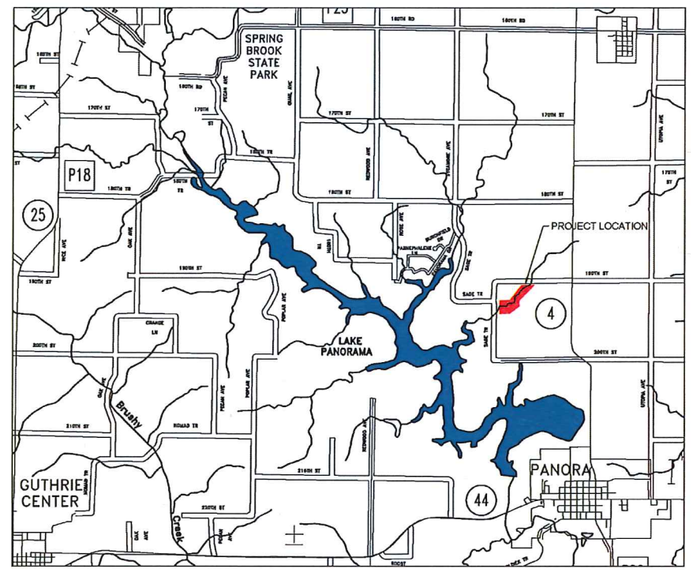
GUT803019A

GUTHRIE COUNTY, IA

STATE OF IOWA



GUTHRIE COUNTY



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CONTACT INFORMATION:

ENGINEER
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IDALS PROJECT REPRESENTATIVE
MIKE BOURLAND
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FX: (515) 281-6170

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

LICENSED PROFESSIONAL ENGINEER
LUKE T. MONAT
22610
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE:
NAME: LUKE MONAT
DATE: LICENSE NUMBER: 22610
MY LICENSE RENEWAL DATE IS: DECEMBER 31, 2016
PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: ALL SHEETS

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ARCHITECTURE + ENGINEERING
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CREP WETLAND PROJECT
HELEN'S COVE

LAKE PANORAMA RURAL IMPROVEMENT ZONE

KEY PLAN

DRAWN	JRM
APPROVED	LTM
ISSUED FOR	CONSTRUCTION
DATE	4/11/2016
FIELD BOOK	
PROJECT NO.:	

COVER SHEET

C0.00

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ESTIMATED PROJECT QUANTITIES:

ITEM NO.	ITEM DESCRIPTION	SPEC. NO.	UNIT	BID QUANTITY	AS-BUILT QUANTITY
1	SITE CLEARING, PREPARATION, & WASTE DISPOSAL	IA-1	LS	1	
2	STRUCTURE & CHANNEL SEEDING	IA-6	AC	4.8	
3	BUFFER SEEDING	IA-6	AC	12.5	
4	MOBILIZATION & DEMOBILIZATION	1A-8	LS	1	
5	DRAINAGE TILE INVESTIGATION AND REMOVAL	IA-9	LF	500	
6	STEEL SHEET PILING	IA-13 & IA-81	SF	1,640	
7	OVER-EXCAVATION, CORE TRENCH UNDERCUT	IA-21	CY	1,420	
8	EARTHFILL, EMBANKMENT AND CORE TRENCH FILL	IA-23	CY	9,650	
9	EARTHFILL, GENERAL FILL	IA-23	CY	22,675	
10	TOPSOIL, STRIP SALVAGE, AND RESPREAD	IA-26	CY	9,940	
11	3" ROADSTONE	IA-61	TON	24	
12	RIPRAP, CLASS 'E' WITH GEOTEXTILE FABRIC	IA-61 & IA-95	TON	925	
13	CONCRETE GROUT FOR RIP RAP	IA-62	CY	65	
14	WATER CONTROL STRUCTURE	IA-620	LS	1	
15	REINFORCED CONCRETE PIPE, 18"	IA-620	LF	124	
16	PERFORATED PE FIELD TILE, 4"	IA-46	LF	123	
17	PERFORATED PE FIELD TILE, 6"	IA-46	LF	130	
18	PERFORATED PE FIELD TILE, 8"	IA-46	LF	140	
19	CORRUGATED METAL PIPE, 6"	IA-51	LF	20	
20	CORRUGATED METAL PIPE, 8"	IA-51	LF	80	
21	CORRUGATED METAL PIPE, 10"	IA-51	LF	20	
22	CORRUGATED METAL PIPE, 12"	IA-51	LF	20	

ESTIMATE REFERENCE INFORMATION:

ITEM NO.	DESCRIPTION
1	SITE CLEARING & PREPARATION: THIS SHALL BE CONSIDERED FULL COMPENSATION TO REMOVE ALL TREES, STUMPS AND BRUSH FROM WITHIN THE PERMANENT EASEMENT. THIS ITEM ALSO INCLUDES THE REMOVAL AND PROPER OFF-SITE DISPOSAL OF ALL WASTE ENCOUNTERED.
2	STRUCTURE & CHANNEL SEEDING: THIS ITEM INCLUDES SEEDING FOR THE EMBANKMENT, OUTLET CHANNEL AREA, AND ALL TERRACES.
3	BUFFER SEEDING: THIS ITEM INCLUDES SEEDING FOR ALL OTHER AREAS ABOVE THE NORMAL POOL ELEVATION AND AREA NOT PART OF THE STRUCTURE AND CHANNEL SEEDING. SEED TO EASMENT BOUNDARY.
4	MOBILIZATION AND DEMOBILIZATION: THIS ITEM INCLUDES THE MOBILIZATION AND DEMOBILIIZATION OF THE CONTRACTOR'S FORCES AND EQUIPMENT FOR PERFORMING THE WORK UNDER CONTRACT. ANY OTHER WORK NECESSARY TO COMPLETE THE SCOPE OF WORK BUT NOT QUANTIFIED SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.
5	DRAINAGE TILE INVESTIGATION AND REMOVAL: THIS ITEM INCLUDES THE EXPLORATORY EXCAVATIONS REQUIRED TO LOCATE AND ABANDON TILES SHOWN ON THE PLANS. THIS IS FULL COMPENSATION FOR THE EXCAVATION, BACKFILLING, AND ABANDONMENT OF THE TILE TRENCHES WITHIN THE PERMANENT EASEMENT BOUNDARY.
6	STEEL SHEET PILING: THIS ITEM INCLUDES THE SHEET PILING AS DETAILED ON SHEETS C4.01 AND C4.02.
7	OVER-EXCAVATION, CORE TRENCH UNDERCUT: THIS ITEM INCLUDES ONLY THE EXCAVATED MATERIAL REQUIRED TO CONSTRUCT THE CORE TRENCH BELOW THE EXISTING GROUND LEVEL, AS DETAILED, ALONG THE CENTERLINE OF THE EMBANKMENT BERM.
8	EARTHFILL, EMBANKMENT AND CORE TRENCH: THIS ITEM INCLUDES THE EARTHFILL REQUIRED TO EXCAVATE THE CORE TRENCH AND EMBANKMENT, AND INCLUDES A 25% SHRINKAGE FACTOR. SEE SHEET C2.03 FOR LIMITS OF EARTHFILL.
9	EARTHFILL, GENERAL FILL: THIS ITEM INCLUDES THE AMOUNT OF EARTHFILL MATERIAL REQUIRED TO CONSTRUCT THE WETLAND AND TERRACES, EXCLUDING THE CORE TRENCH AND EMBANKMENT. SEE SHEET C2.03 & C3.02 FOR LIMITS OF EARTHFILL. INCLUDES A 25% SHRINKAGE FACTOR.
10	TOPSOIL STRIP, SALVAGE, AND RE-SPREAD: THIS ITEM INCLUDES THE STRIPPING, SALVAGE, AND STOCKPILE 6" OF EXISTING MATERIAL FROM ALL AREAS TO BE EXCAVATED OR DISTURBED. ALL AREAS TO RECEIVE SEED, BORROW AREAS, AND EXCAVATIONS BELOW THE NORMAL POOL ELEVATION SHALL HAVE A MINIMUM OF 6" OF TOPSOIL PLACED.
11	3" ROADSTONE: THIS ITEM INCLUDES THE PLACEMENT OF 3" ROADSTONE AND GEOTEXTILE FABRIC REQUIRED FOR THE WETLAND CROSSING ROAD UPSTREAM OF THE SHEET PILE STRUCTURE.
12	RIP RAP, CLASS 'E' WITH GEOTEXTILE FABRIC: THIS ITEM INCLUDES THE EXCAVATION AND PLACEMENT OF CLASS 'E' RIP RAP OVER GEOTEXTILE FABRIC FOR LOCATIONS DOWNSTREAM OF THE SHEET PILE WEIR, ARMORING UPSTREAM OF THE SHEET PILE WEIR, ROCK OVERFLOW STRUCTURE AT FOREBAY, AND ALL LETDOWN STRUCTURES.
13	CONCRETE GROUT FOR RIP RAP: GROUT MIX SHALL BE AS DETAILED ON SHEET C4.01 AS SPECIFIED AND PLACED AT 5.4 CUBIC FEET PER SQUARE YARD OF RIP RAP SURFACE AREA. GROUT SHALL FULLY ENCASE THE BOTTOM OF THE RIP RAP BUT NOT FULL TO THE TOP OF THE RIP RAP SO AS TO REDUCE THE ENERGY DISSIPATION CAPABILITIES OF THE RIP RAP.
14	WATER CONTROL STRUCTURE: THIS ITEM INCLUDES THE MAIN CONTROL STRUCTURE, LID, LOCKING MECHANISM, ALUMINUM STOP LOGS, STEPS, STOP LOG REMOVAL TOOLS, SLAB AND GRATE, AND ANIMAL GUARDS. THE FABRICATION AND INSTALLATION OF THE RCP ANTI-SEEP COLLARS SHALL BE INCLUDED IN THIS ITEM.
15	REINFORCED CONCRETE PIPE, 18": THIS ITEM INCLUDES THE RCP PIPE, PIPE BENDS, AND FLARED END SECTIONS.
16-18	PERFORATED POLYETHYLENE DRAIN TILE: THIS ITEM INCLUDES COSTS FOR THE MATERIAL, EXCAVATION, PLACEMENT, JOINTING, AND BACKFILL OF THE PERFORATED POLYETHYLENE DRAIN TILE.
19-22	CORRUGATED METAL PIPE: THIS ITEM INCLUDES THE COSTS FOR MATERIAL EXCAVATION, PLACEMENT, JOINTING, BEDDING, AND BACKFILLING OF THE CMP.

GENERAL NOTES:

1. THE LOCATIONS OF UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS PLOTTED ON THIS DRAWING ARE APPROXIMATE ONLY AND WERE OBTAINED FROM RECORDS MADE AVAILABLE TO SHIVE-HATTERY, INC. THERE MAY BE OTHER EXISTING UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS NOT KNOWN TO SHIVE-HATTERY, INC. AND NOT SHOWN ON THIS DRAWING. THE VERIFICATION OF EXISTENCE OF, AND THE DETERMINATION OF THE EXACT LOCATION OF, UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR(S).
2. IOWA CODE 480, UNDERGROUND FACILITIES INFORMATION, REQUIRES VERBAL NOTICE TO IOWA ONE-CALL 1-800-292-8989, NOT LESS THAN 48 HOURS BEFORE EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS.
3. THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
4. NO WORK SHALL BE PERFORMED BEYOND THE PROJECT LIMITS WITHOUT PRIOR AUTHORIZATION FROM THE OWNER'S REPRESENTATIVE.
5. REPLACE ANY PROPERTY MONUMENTS REMOVED OR DESTROYED BY CONSTRUCTION. MONUMENTS SHALL BE SET BY A LAND SURVEYOR REGISTERED TO PRACTICE IN THE STATE OF IOWA.
6. ALL DEBRIS AND TRASH ENCOUNTERED DURING CONSTRUCTION WITHIN THE PROJECT LIMITS, OR DIRECTED BY THE ENGINEER, SHALL BE PROPERLY DISPOSED OF.
7. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION DE-WATERING THAT IS REQUIRED AT NO ADDITIONAL COST TO THE DIVISION.
8. REPAIR OR REPLACE DAMAGE TO EXISTING FACILITIES (TILE, UTILITIES, FENCES, ETC.) DESIGNATED TO REMAIN, AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL AREAS DISTURBED BY CONSTRUCTION, INCLUDING STAGING AREAS AND HAUL ROUTES, ARE TO BE REWORKED TO THEIR EXISTING CONDITIONS AND SEEDED AT NO ADDITIONAL COST TO THE DIVISION IF OUTSIDE OF PROJECT LIMITS AND NOT APPROVED BY ENGINEER.
9. WORK WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT WILL BE CONSIDERED UNACCEPTABLE. UNACCEPTABLE WORK, WHETHER THE RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS OR ANY OTHER CAUSE, FOUND TO EXIST PRIOR TO THE FINAL ACCEPTANCE OF THE WORK, SHALL BE REMOVED AND REPLACED IN AN ACCEPTABLE MANNER, AS REQUIRED BY THE OWNER AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR IS RESPONSIBLE FOR ALL SURVEY LAYOUT AND CONTROL REQUIRED TO COMPLETE ALL WORK.
11. WORK DONE CONTRARY TO THE INSTRUCTIONS OF THE OWNERS REPRESENTATIVE, WORK DONE BEYOND THE LINES SHOWN ON THE PLANS OR ANY EXTRA WORK DONE WITHOUT AUTHORITY WILL NOT BE PAID FOR.
12. A SHRINKAGE FACTOR OF 25% WAS ESTIMATED FOR THIS PROJECT. THE CONTRACTOR SHALL MAKE CHANGES IN EARTHWORK AS NEEDED TO ADJUST FOR INACCURACIES INHERENT WITH ESTIMATING THE SHRINKAGE FACTOR. THESE CHANGES SHALL ONLY BE MADE AFTER CONSULTATION AND APPROVAL BY THE ENGINEER AND DIVISION.
13. CONTOURS AND SPOT ELEVATIONS SHOWN ARE TO FINISHED GRADE.
14. THE CONTRACTOR SHALL KEEP ALL ROADS OPEN TO THROUGH TRAFFIC AT ALL TIMES.
15. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL BE COORDINATED WITH THE GOVERNING AUTHORITY AND SHALL BE DONE IN ACCORDANCE WITH THEIR STANDARDS.
16. SUBMIT MANUFACTURER'S CERTIFICATION AND MATERIAL DATA FOR ALL MATERIALS DELIVERED TO THE PROJECT SITE AS REQUESTED BY THE OWNERS REPRESENTATIVE.
17. CONSTRUCTION SURVEY STAKING WILL BE PAID FOR BY THE OWNER AND PROVIDED BY THE ENGINEER. CONTROL POINTS WILL BE SET FOR USE WITH GPS CONTROLLED GRADING, IF DESIRED. CONTRACTOR SHALL PRESERVE STAKES TO THE EXTENT FEASIBLE. ANY RE-STAKING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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CREP WETLAND PROJECT
HELEN'S COVE

LAKE PANORAMA RURAL IMPROVEMENT ZONE

KEY PLAN

DRAWN	JRM
APPROVED	LTM
ISSUED FOR	CONSTRUCTION
DATE	4-11-2015
FIELD BOOK	
PROJECT NO.:	

PROJECT QUANTITIES & NOTES

C0.01

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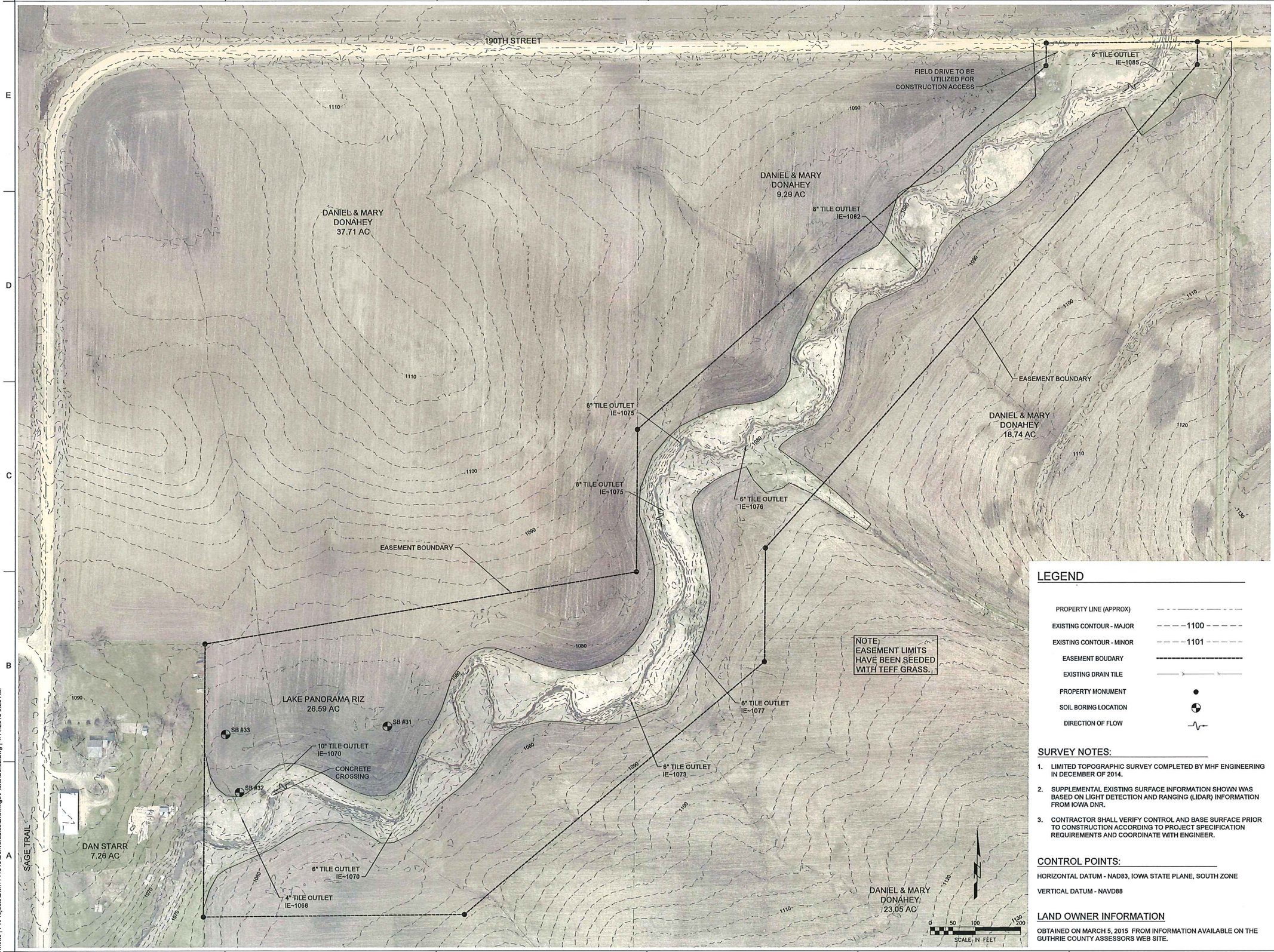

LEGEND

PROPERTY LINE (APPROX)	
EXISTING CONTOUR - MAJOR	1100
EXISTING CONTOUR - MINOR	1101
EASEMENT BOUDARY	
EXISTING DRAIN TILE	
PROPERTY MONUMENT	
SOIL BORING LOCATION	
DIRECTION OF FLOW	

SURVEY NOTES:

1. LIMITED TOPOGRAPHIC SURVEY COMPLETED BY MHF ENGINEERING IN DECEMBER OF 2014.
2. SUPPLEMENTAL EXISTING SURFACE INFORMATION SHOWN WAS BASED ON LIGHT DETECTION AND RANGING (LIDAR) INFORMATION FROM IOWA DNR.
3. CONTRACTOR SHALL VERIFY CONTROL AND BASE SURFACE PRIOR TO CONSTRUCTION ACCORDING TO PROJECT SPECIFICATION REQUIREMENTS AND COORDINATE WITH ENGINEER.

CONTROL POINTS:

HORIZONTAL DATUM - NAD83, IOWA STATE PLANE, SOUTH ZONE

VERTICAL DATUM - NAVD88

LAND OWNER INFORMATION

OBTAINED ON MARCH 5, 2015 FROM INFORMATION AVAILABLE ON THE GUTHRIE COUNTY ASSESSORS WEB SITE.

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CREP WETLAND PROJECT
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LAKE PANORAMA RURAL IMPROVEMENT ZONE

KEY PLAN

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PROJECT NO.:	4141510

EXISTING SITE CONDITIONS

C0.02

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190TH STREET

DANIEL & MARY DONAHEY 37.71 AC

DANIEL & MARY DONAHEY 9.29 AC

DANIEL & MARY DONAHEY 18.74 AC

DANIEL & MARY DONAHEY 23.05 AC

DAN STARR 7.26 AC

SAGE TRAIL

LAKE PANORAMA RIZ 26.59 AC

SECTION LINE

6" TILE OUTLET IE~1085

8" TILE OUTLET IE~1082

6" TILE OUTLET IE~1075

SEDIMENT FOREBAY GRADING SEE SHEETS C3.01 & C3.02

8" TILE OUTLET IE~1075

6" TILE OUTLET IE~1076

EASEMENT 26.59 ACRES

100 YEAR WSEL= 1080.10

DAM EMBANKMENT SEE SHEETS C2.01 & C2.02

DRAWDOWN STRUCTURE SEE SHEETS C5.01 & C7.01

SB #33

SB #31

10" TILE OUTLET IE~1070

CONCRETE CROSSING

SHEETPILE STRUCTURE SEE SHEETS C4.01 & C4.02

SB #32

6" TILE OUTLET IE~1070

4" TILE OUTLET IE~1068

PERMANENT IMPOUNDMENT NWL = 1075.00

WETLAND GRADING SEE SHEETS C2.02 & C2.03

6" TILE OUTLET IE~1077

6" TILE OUTLET IE~1073

0 50 100 200
SCALE IN FEET

LEGEND

EXISTING FENCE	
PROPERTY LINE (APPROX)	
EXISTING TILE LINE	
100 YEAR WSEL	
NORMAL POOL	
EXISTING CONTOUR - MAJOR	1100
EXISTING CONTOUR - MINOR	1101
PROPOSED CONTOUR - MAJOR	1100
PROPOSED CONTOUR - MINOR	1101

CREP PARAMETERS

DRAINAGE AREA = 888 AC
SURFACE AREA= 5.30 AC
SA/DA RATIO= 0.60%
> 3' DEPTH = 14.40%
< 3' DEPTH = 85.60%
SEDIMENT DELIVERY= 232 TON/YEAR
STORAGE BELOW NWL = 15,140 CY ~ 18,400 TON

HYDRAULIC PARAMETERS

PRINCIPLE OUTLET EL.	1075.50'
STORAGE AT NWL	9.38 AC-FT
STORAGE AT TOP OF DAM	61.90 AC-FT
HIGH WATER, 1 YR. EL.	1076.54'
HIGH WATER, 25 YR. EL.	1078.80'
HIGH WATER, 50 YR. EL.	1079.45'
HIGH WATER, 100 YR. EL.	1080.10'
Q1 = 100.07 CFS	
Q25 = 623.47 CFS	
Q50 = 836.77 CFS	
Q100 = 1081.26 CFS	

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LAKE PANORAMA RURAL IMPROVEMENT ZONE

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OVERALL SITE PLAN

C1.01

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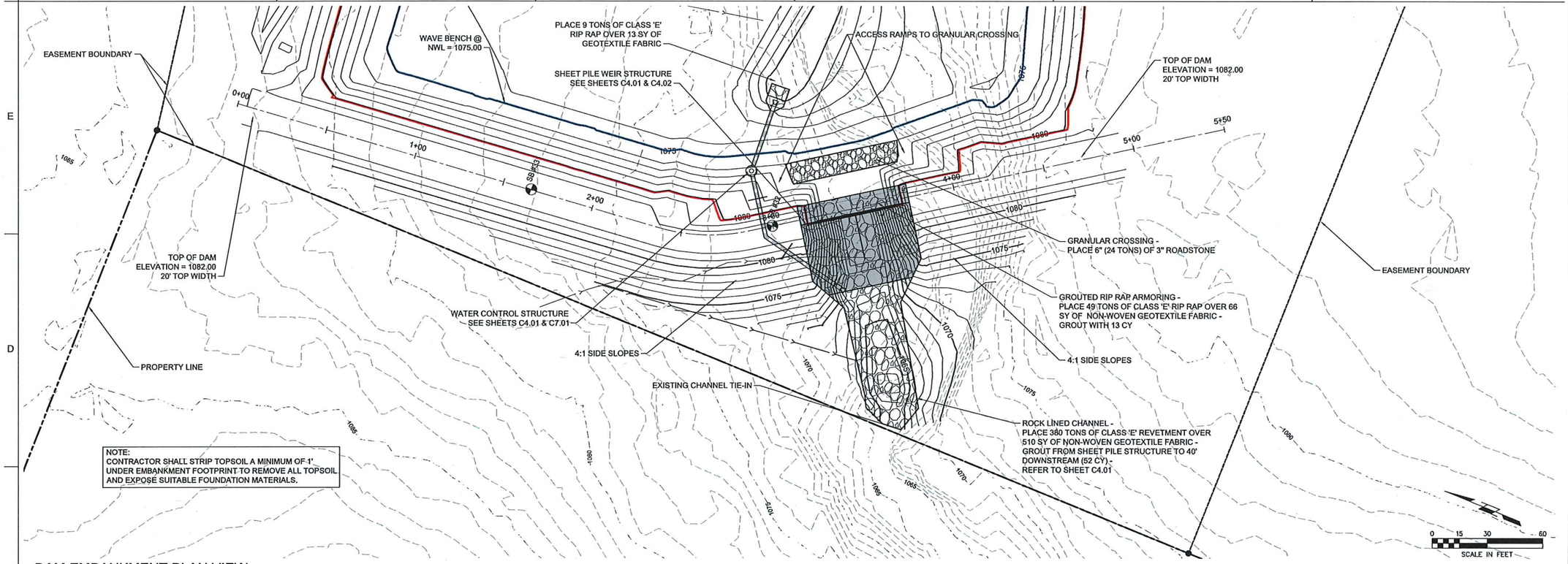
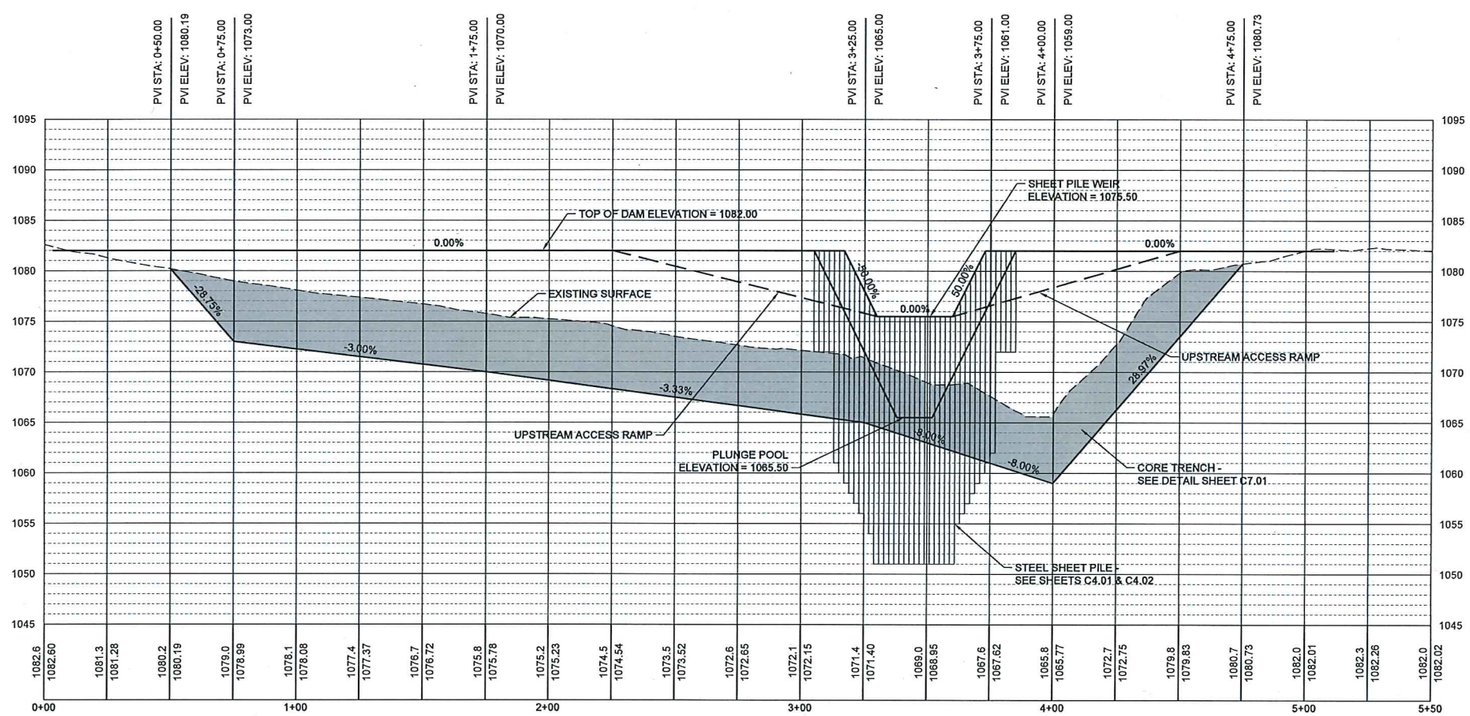


NOTE:
CONTRACTOR SHALL STRIP TOPSOIL A MINIMUM OF 1' UNDER EMBANKMENT FOOTPRINT TO REMOVE ALL TOPSOIL AND EXPOSE SUITABLE FOUNDATION MATERIALS.

DAM EMBANKMENT PLAN VIEW

1"=30'



NOTE:
EMBANKMENT GRADES SHOULD BE CONSTRUCTED TO MINIMUM ELEVATIONS OF 3' BELOW TOP OF SHEET PILE PRIOR TO INSTALLATION OF SHEET PILE WEIR.

DAM EMBANKMENT CENTERLINE PROFILE

HORIZONTAL SCALE: 1"=30', VERTICAL SCALE: 1"=7.5'

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PROJECT NO.:

DAM ENBANKMENT PLAN & PROFILE

C2.01

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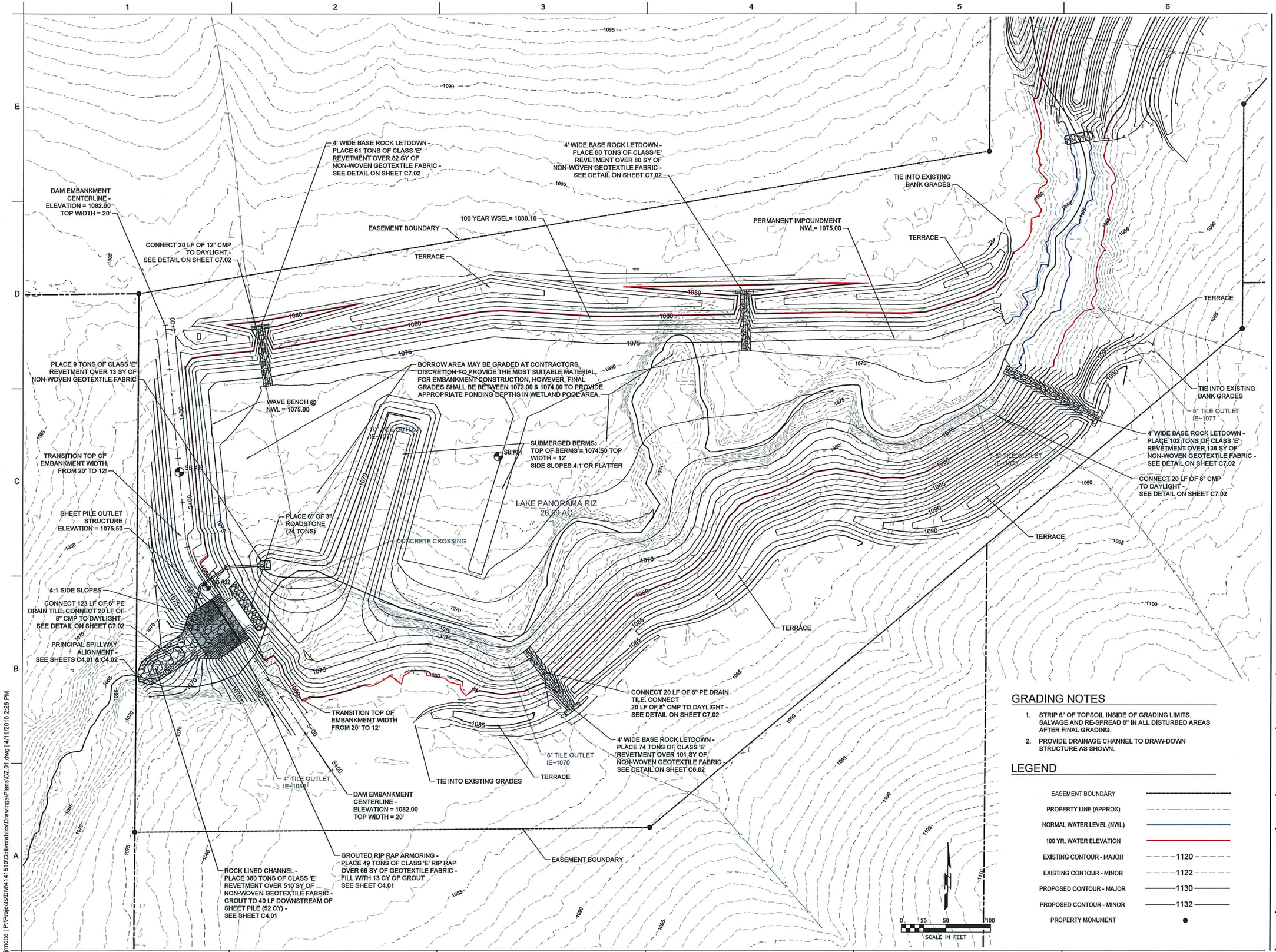

GRADING NOTES

1. STRIP 6" OF TOPSOIL INSIDE OF GRADING LIMITS. SALVAGE AND RE-SPREAD 6" IN ALL DISTURBED AREAS AFTER FINAL GRADING.
2. PROVIDE DRAINAGE CHANNEL TO DRAW-DOWN STRUCTURE AS SHOWN.

LEGEND

EASEMENT BOUNDARY	
PROPERTY LINE (APPROX)	
NORMAL WATER LEVEL (NWL)	
100 YR. WATER ELEVATION	
EXISTING CONTOUR - MAJOR	1120
EXISTING CONTOUR - MINOR	1122
PROPOSED CONTOUR - MAJOR	1130
PROPOSED CONTOUR - MINOR	1132
PROPERTY MONUMENT	●

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PROJECT NO.:

DAM EMBANKMENT GRADING PLAN

C2.02

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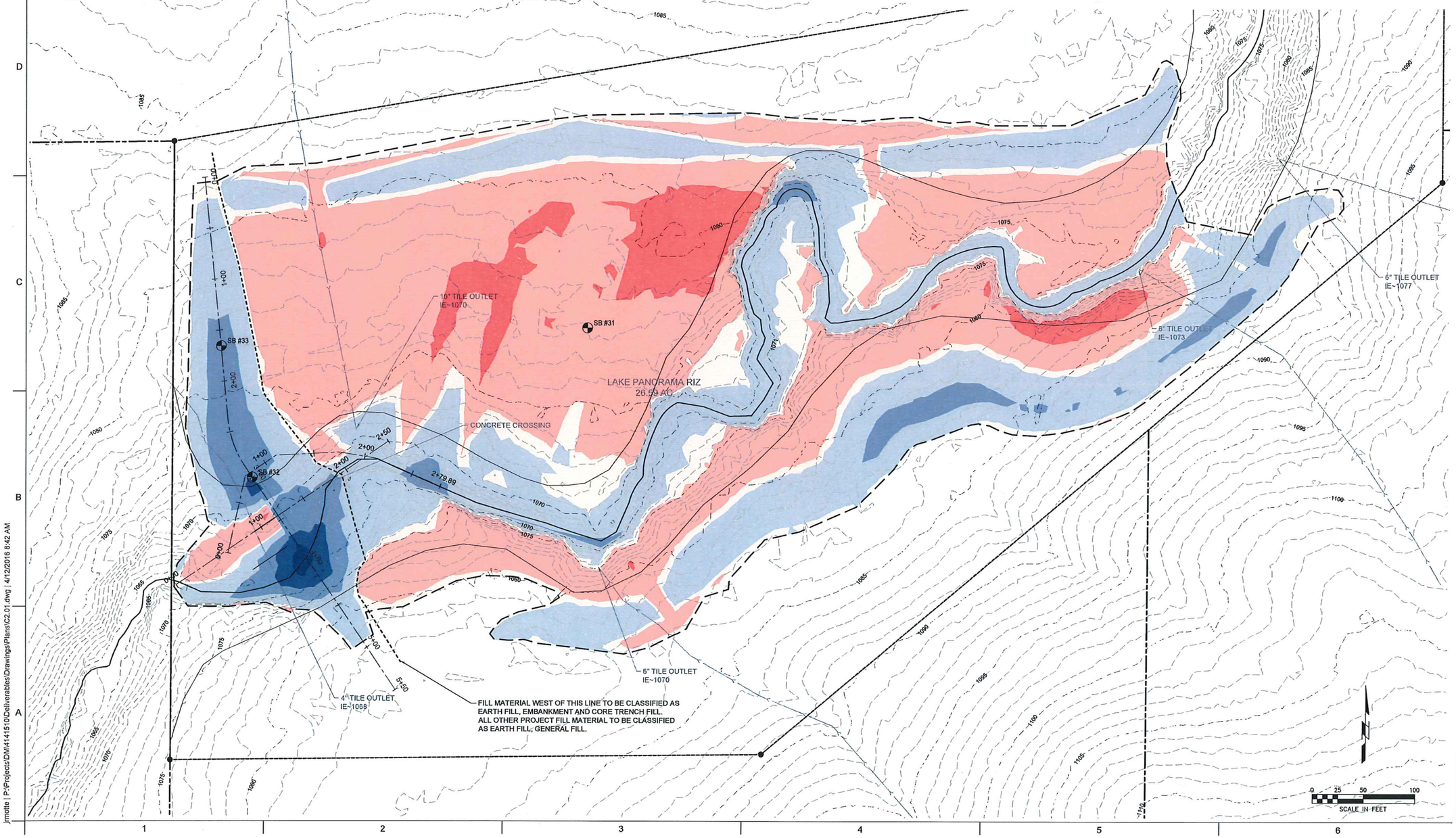
ELEVATIONS TABLE

CUT/FILL	MINIMUM ELEVATION (FT.)	MAXIMUM ELEVATION (FT.)	COLOR
CUT	-10.0000	-5.0000	
CUT	-5.0000	0.0000	
BALANCE	0.0000	0.0000	
FILL	0.0000	5.0000	
FILL	5.0000	10.0000	
FILL	10.0000	15.0000	
FILL	15.0000	20.0000	

EARTHWORK TABLE

CLASSIFICATION	CUT	FILL	TOTAL FILL + 25 % SHRINK
OVEREXCAVATION, CORE TRENCH	1,420 CY	N/A	N/A
EARTHFILL, EMBANKMENT & CORE TRENCH	8,180 CY	6,300 CY + 1,420 CY	9,650 CY
EARTHFILL, GENERAL FILL	13,675 CY	10,940 CY	13,675 CY



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PROJECT NO.:

DAM EMBANKMENT CUT/FILL PLAN

C2.03

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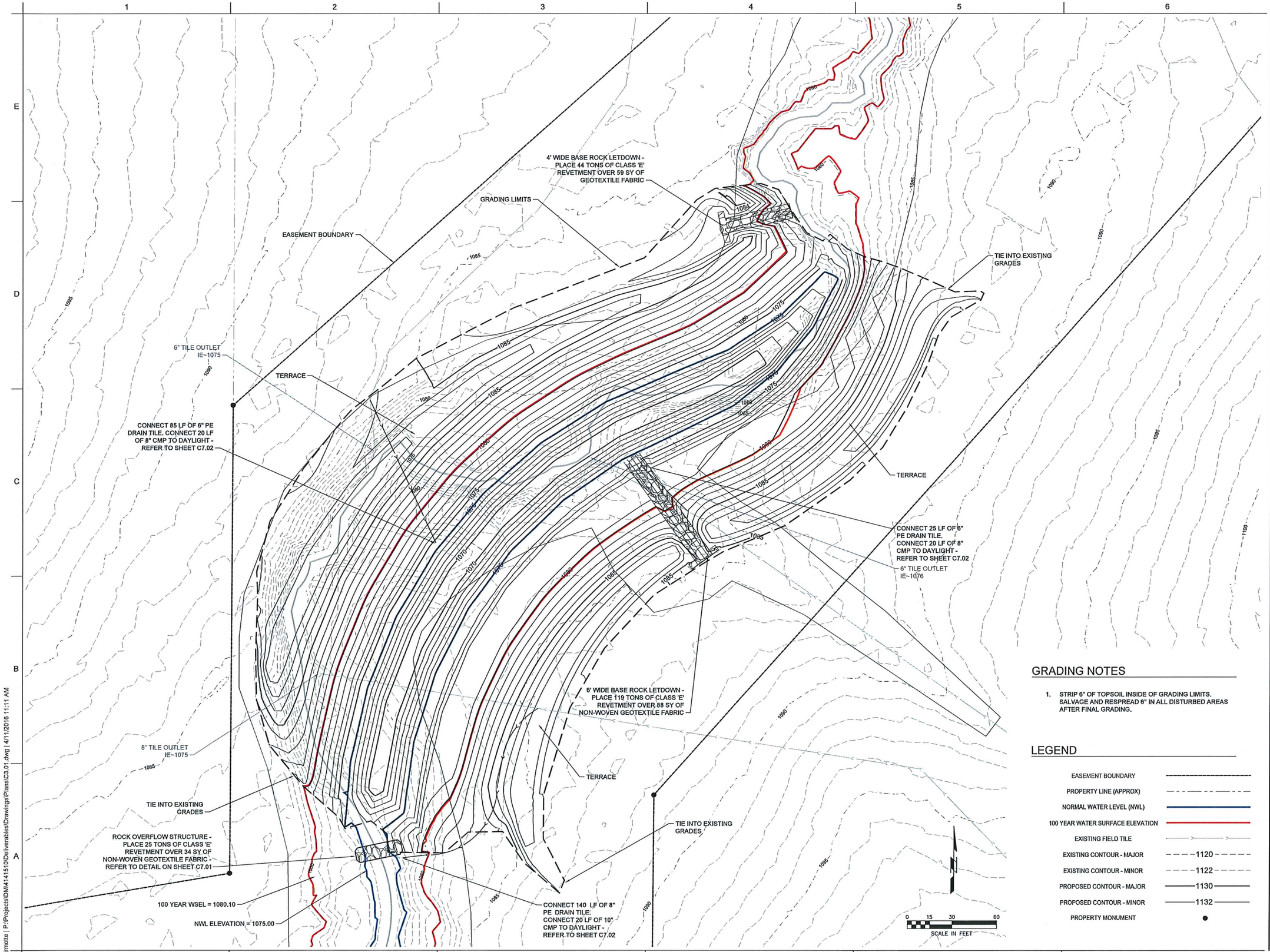

GRADING NOTES

1. STRIP 6" OF TOPSOIL INSIDE OF GRADING LIMITS. SALVAGE AND RESPREAD 6" IN ALL DISTURBED AREAS AFTER FINAL GRADING.

LEGEND

EASEMENT BOUNDARY	
PROPERTY LINE (APPROX)	
NORMAL WATER LEVEL (NWL)	
100 YEAR WATER SURFACE ELEVATION	
EXISTING FIELD TILE	
EXISTING CONTOUR - MAJOR	1120
EXISTING CONTOUR - MINOR	1122
PROPOSED CONTOUR - MAJOR	1130
PROPOSED CONTOUR - MINOR	1132
PROPERTY MONUMENT	●

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CREP WETLAND PROJECT
HELEN'S COVE

LAKE PANORAMA RURAL IMPROVEMENT ZONE

KEY PLAN

DRAWN	JRM
APPROVED	LTM
ISSUED FOR	CONSTRUCTION
DATE	4-11-2015
FIELD BOOK	

PROJECT NO.:

SEDIMENT FOREBAY GRADING PLAN

C3.01

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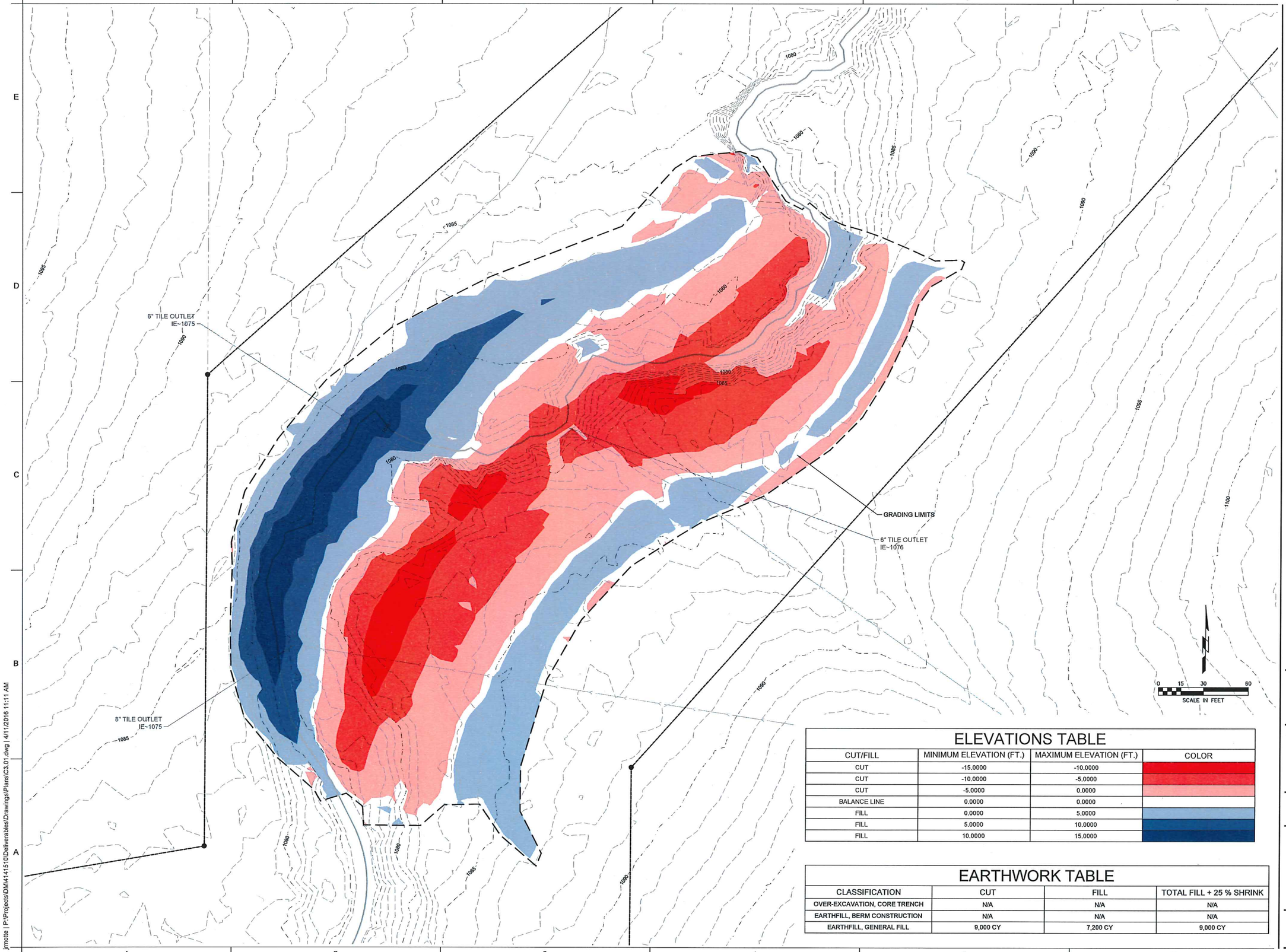

ELEVATIONS TABLE

CUT/FILL	MINIMUM ELEVATION (FT.)	MAXIMUM ELEVATION (FT.)	COLOR
CUT	-15.0000	-10.0000	
CUT	-10.0000	-5.0000	
CUT	-5.0000	0.0000	
BALANCE LINE	0.0000	0.0000	
FILL	0.0000	5.0000	
FILL	5.0000	10.0000	
FILL	10.0000	15.0000	

EARTHWORK TABLE

CLASSIFICATION	CUT	FILL	TOTAL FILL + 25 % SHRINK
OVER-EXCAVATION, CORE TRENCH	N/A	N/A	N/A
EARTHFILL, BERM CONSTRUCTION	N/A	N/A	N/A
EARTHFILL, GENERAL FILL	9,000 CY	7,200 CY	9,000 CY

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PROJECT NO.:

SEDIMENT FOREBAY
CUT/FILL PLAN

C3.02

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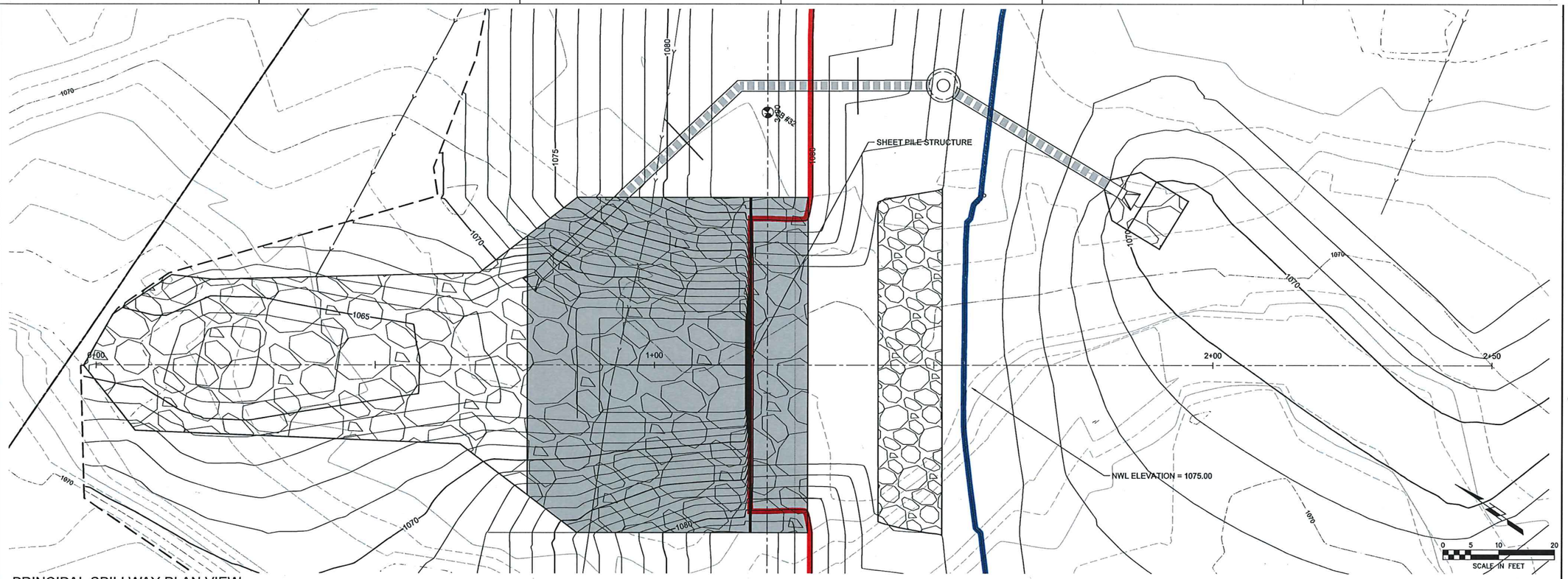
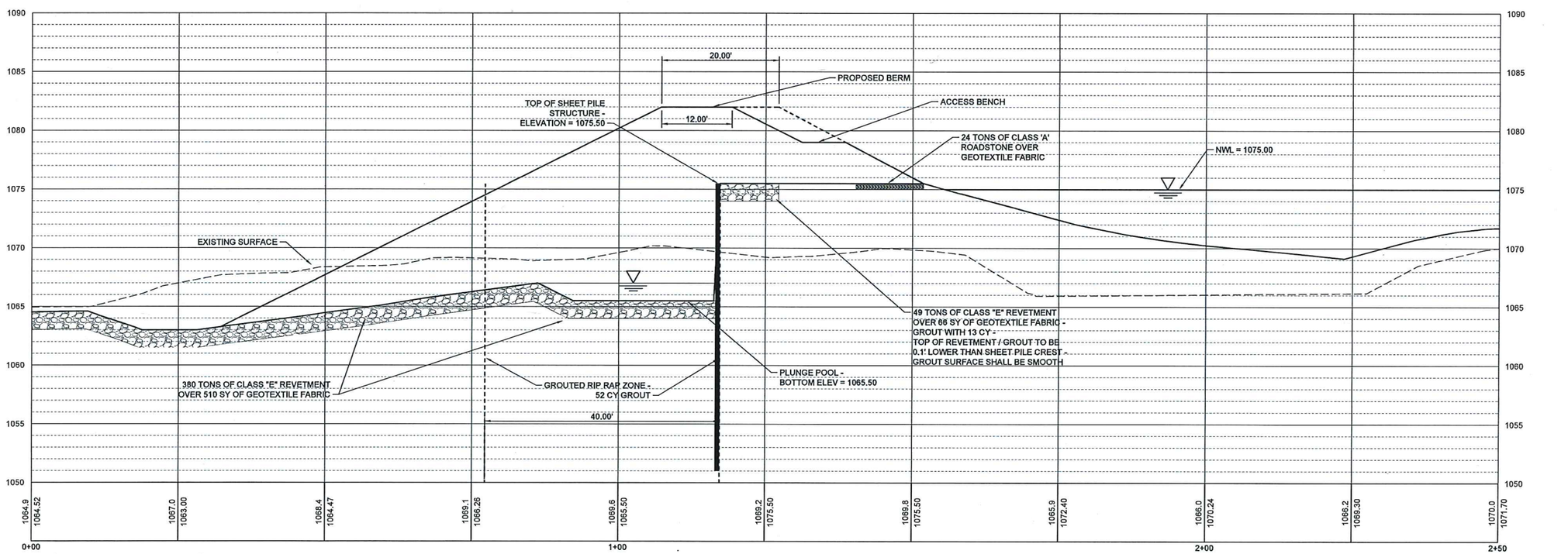


PRINCIPAL SPILLWAY PLAN VIEW

1"=10'



PRINCIPAL SPILLWAY PROFILE VIEW

HORIZONTAL SCALE: 1"=10', VERTICAL SCALE: 1"=5'

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PROJECT NO.:

PRINCIPAL SPILLWAY PLAN & PROFILE

C4.01

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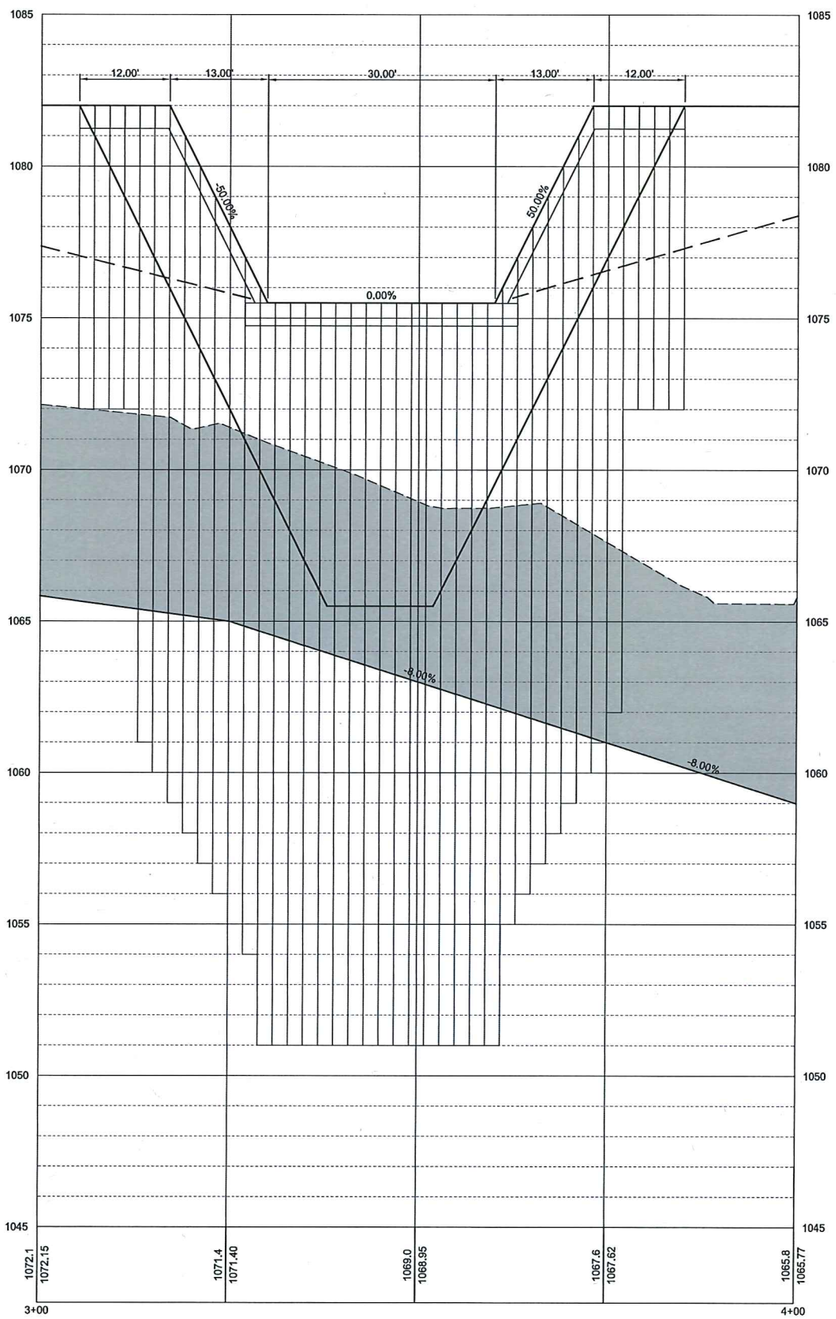


HORIZONTAL SCALE 0 5 10 20 SCALE IN FEET

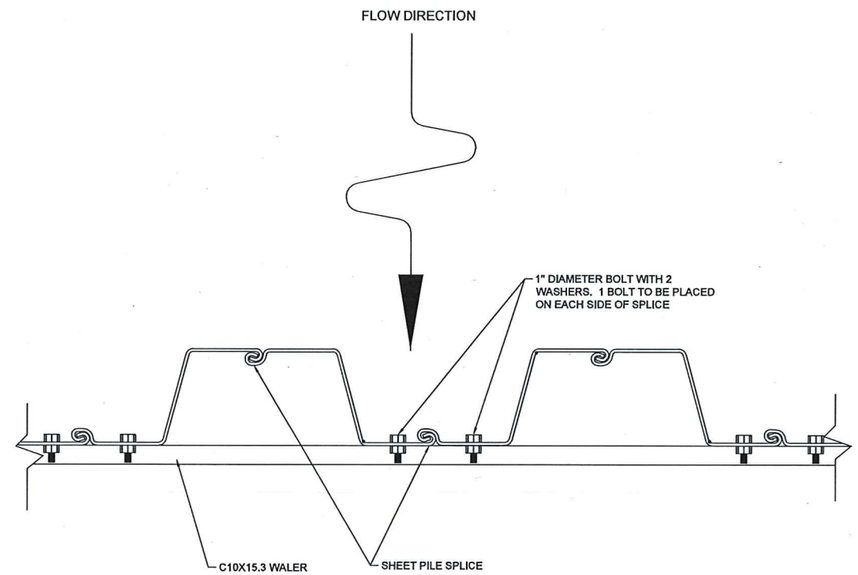
VERTICAL SCALE 0 1.25 2.5 5 SCALE IN FEET

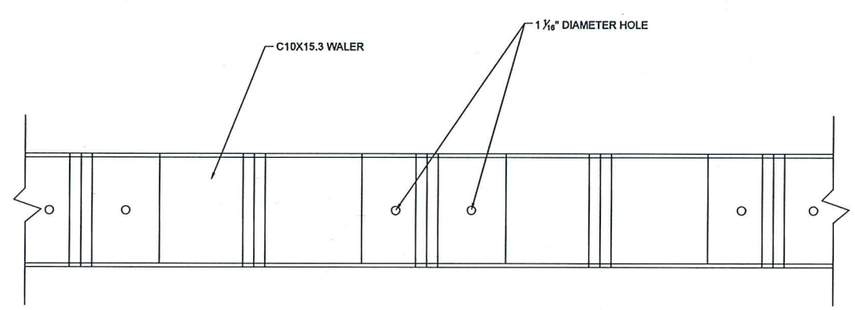
SHEET PILE SECTION

HORIZONTAL: 1"=10' VERTICAL 1"=2.5'

SHEET PILE GENERAL NOTES:

1. DESIGN SHEET PILE AREA IS 1640 SF AFTER TRIMMING
2. SHEET PILING REQUIREMENTS
   - 2.1. MINIMUM SECTION MODULUS OF 15.5 IN^3 PER FOOT OF WALL.
   - 2.2. MINIMUM GRADE OF STEEL IS 50 KSI
   - 2.3. MINIMUM MOMENT OF INERTIA OF 89 IN^4 PER FOOT OF WALL.
   - 2.4. MINIMUM THICKNESS OF 0.3125"
   - 2.5. ALL SHEET PILING SHALL MEET ASTM A-328, A-572 GR50 OR A-690.
3. CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS OF PROPOSED SHEETPILE SYSTEM FOR APPROVAL BY ENGINEER.
4. ALL BOLTS WILL BE 1" DIAMETER WITH 2 WASHERS. BOLT SHALL BE EXTENDED AT A MINIMUM OF ⅜" BEYOND THE NUT.
5. ALL HOLES SHALL BE DRILLED TO 1 1/16".
6. THE WALER SHALL BE PLACED ON THE DOWNSTREAM SIDE OF THE WEIR.
7. ANY HOLES LEFT IN SHEET PILE SHALL BE CLOSED OFF.
8. AFTER SHEETING AND WALER INSTALLATION, ALL SHEETING IS TO BE CUT TO CONFORM WITH THE 2:1 SIDE SLOPE OF THE WEIR.
9. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST SPECIFICATION OF AISC. FABRICATOR SHALL SUBMIT SHOP DRAWINGS AND FABRICATE AFTER ENGINEER'S REVIEW AND APPROVAL.
10. DEFLECTIONS SHALL BE MADE IN FABRICATED PIECES AND STILL CONFORM TO THE DIMENSIONS GIVEN.
11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LIVE LOADS.
12. PROVIDE ALL NECESSARY TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACED DURING CONSTRUCTION.
13. SEQUENCE OF SHEET PILE DRIVING TO BE FROM CENTER OF CONTROL STRUCTURE OUTWARD.
14. A TEMPORARY BERM TO HOLD / GUIDE SHEETPILE DURING CONSTRUCTION IS RECOMMENDED.





C C4.01 SHEET PILE DETAILS

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CREP WETLAND PROJECT
HELEN'S COVE

LAKE PANORAMA RURAL IMPROVEMENT ZONE

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SHEET PILE CROSS SECTION & DETAILS

C4.02

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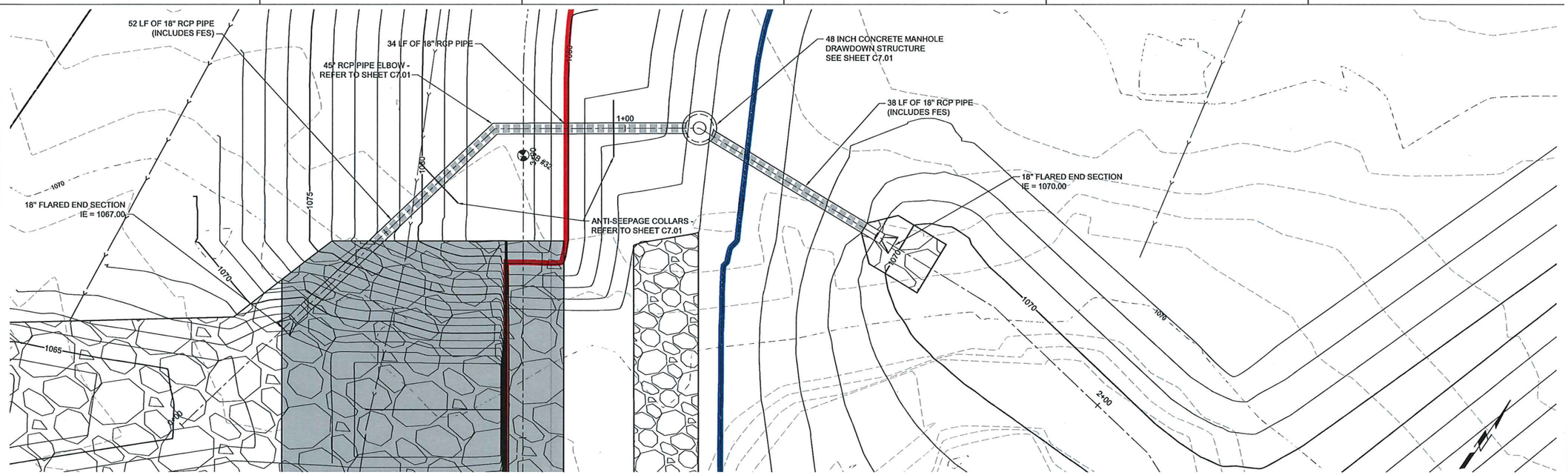
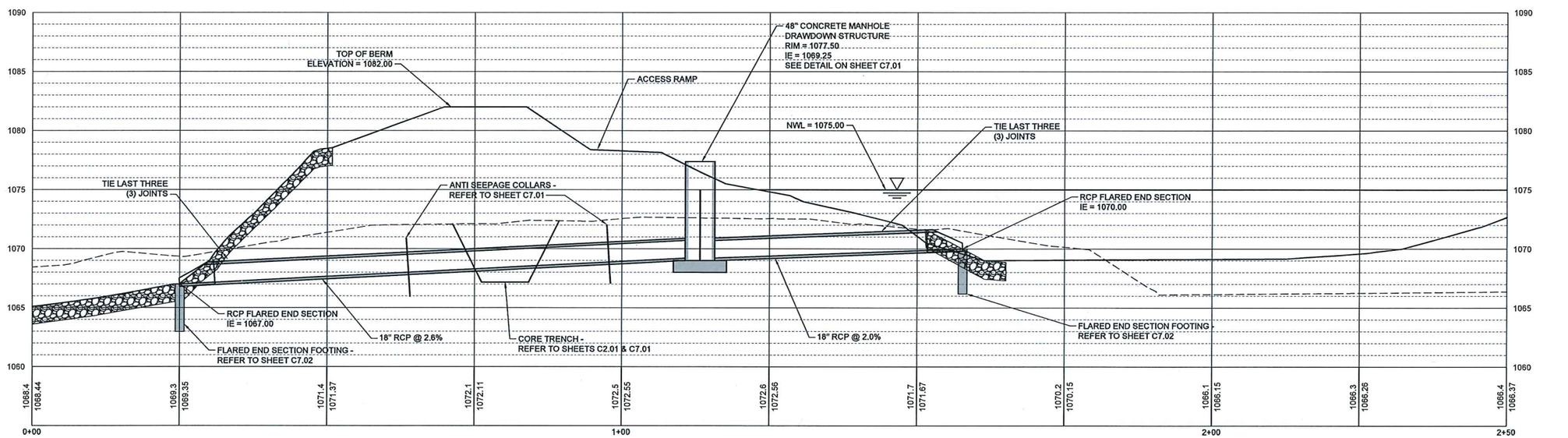


DRAW DOWN STRUCTURE PLAN VIEW

1"=10'



DRAW DOWN STRUCTURE CENTERLINE PROFILE

HORIZONTAL SCALE: 1"=10', VERTICAL SCALE: 1"=5'

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CREP WETLAND PROJECT
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PROJECT NO.:

DRAWDOWN STRUCTURE
PLAN & PROFILE

C5.01

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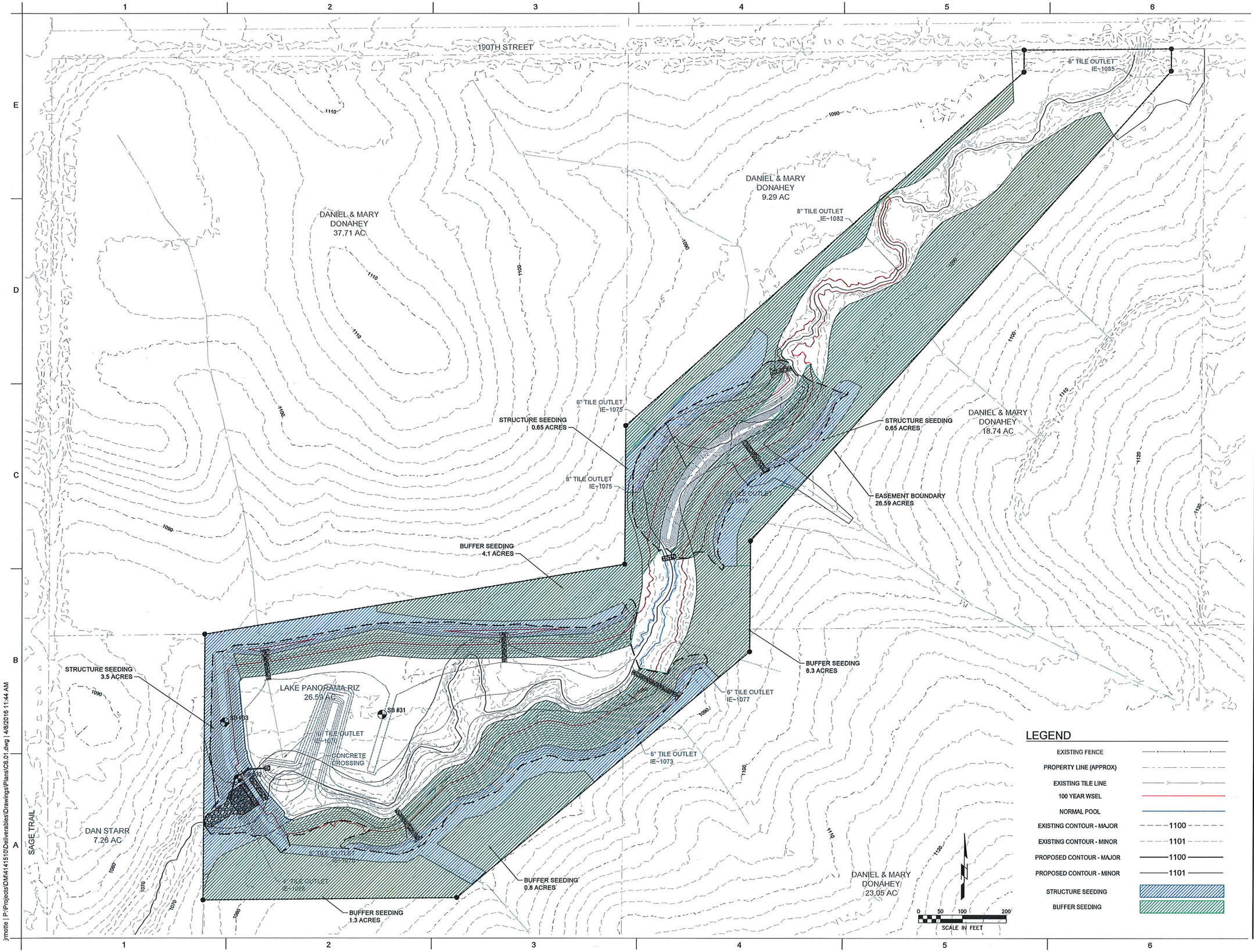

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SEEDING PLAN

C6.01

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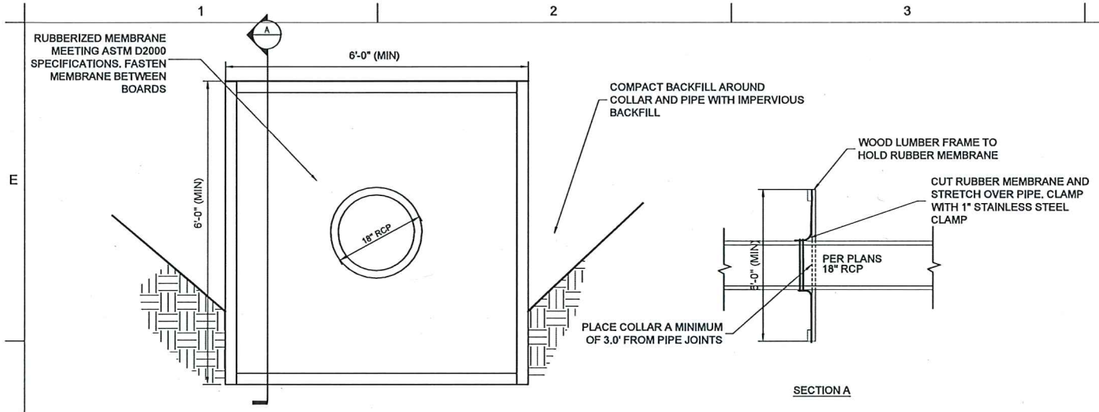

1 C4.02 RUBBER MEMBRANE ANTI-SEEPAGE COLLAR
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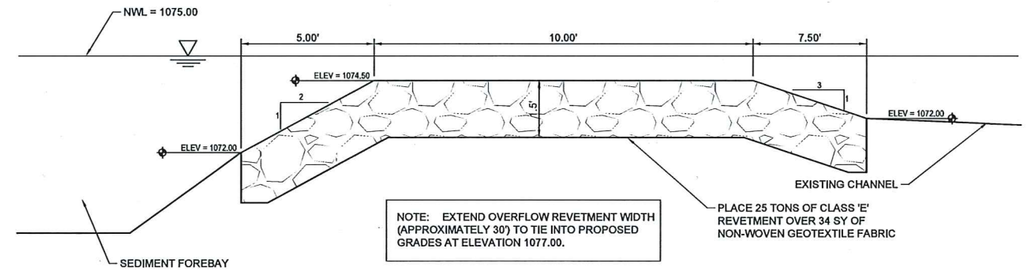
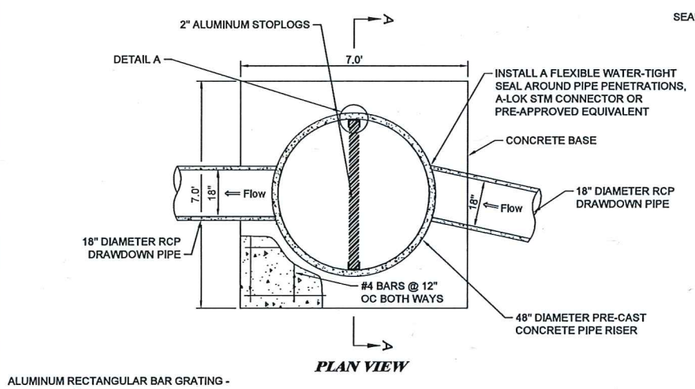
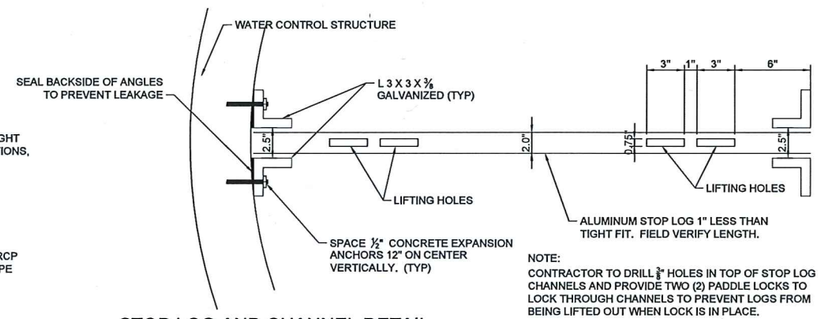


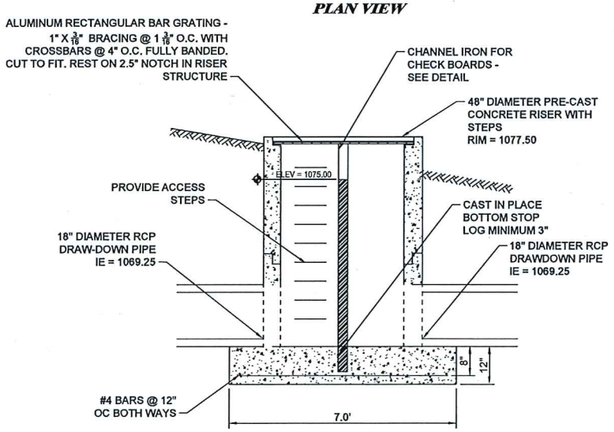
2 C3.01 SEDIMENT FOREBAY SPILLWAY
NTS





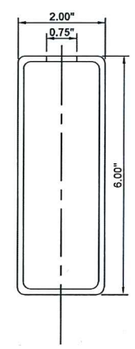
NOTE:
CONTRACTOR TO DRILL ⅜" HOLES IN TOP OF STOP LOG CHANNELS AND PROVIDE TWO (2) PADDLE LOCKS TO LOCK THROUGH CHANNELS TO PREVENT LOGS FROM BEING LIFTED OUT WHEN LOCK IS IN PLACE.

STOP LOG AND CHANNEL DETAIL
NTS



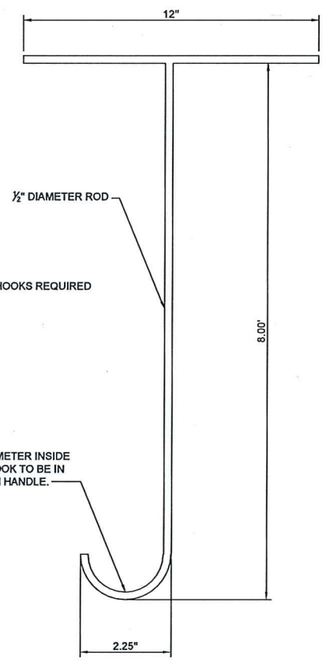
NOTES:
1.) PROVIDE STRUCTURE SHOP DRAWINS FOR ENGINEERS REVIEW AND APPROVAL BEFORE FABRICATION OF WATER CONTROL STRUCTURE.
2.) WATER CONTROL STRUCTURE TO BE PRE FABRICATED CONCRETE RISER STRUCTURE WITH WATERTIGHT SEALS AT SECTION JOINTS AND PIPE PENETRATIONS. PROVIDE MANHOLE STEPS.
3.) ALL STEEL SHALL BE GALVANIZED. ALL ANCHORS TO BE STAINLESS STEEL.

3 C4.1 WATER CONTROL STRUCTURE
NTS



NOTE:
ALL ALUMINUM STOP-LOGS SHALL BE PROVIDED BY CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR CUTTING STOP-LOGS AS SHOWN. THE 0.75" DIMENSION IS CRITICAL AND NEEDS TO BE CENTERED IN THE STOP-LOG TO AVOID LEAKAGE. THE FINISHED SURFACE SHALL BE SMOOTH TO PROVIDE A FLAT SURFACE FOR THE STOP-LOG ABOVE IT. THE CONTRACTOR SHALL DELIVER 16 STOP-LOGS TO THE SITE. THE COST OF THE STOP-LOG WORK IS INCIDENTAL TO THE OUTLET CONTROL STRUCTURE.

STOP LOG CROSS SECTION
NTS



NOTE:
TWO (2) LIFTING HOOKS REQUIRED

LIFTING HOOK DETAIL
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DETAILS

C7.01

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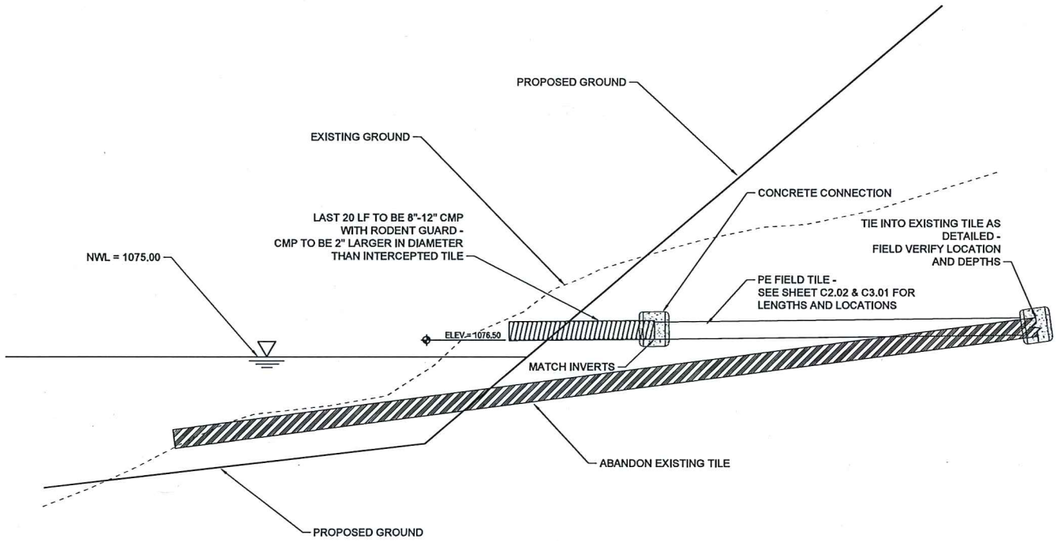
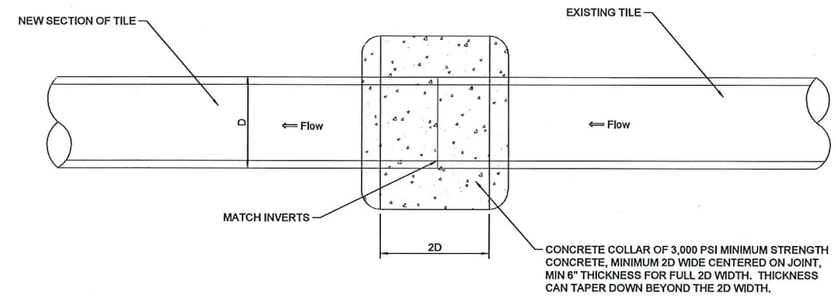
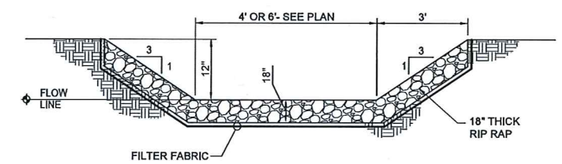


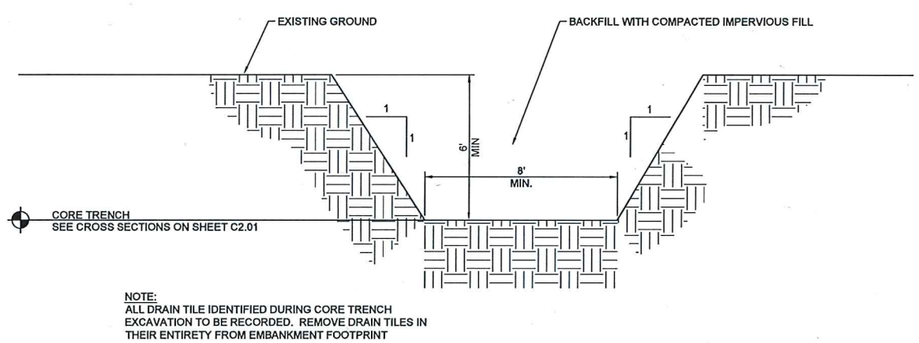
8 C3.01 DRAIN TILE OUTLET
NTS



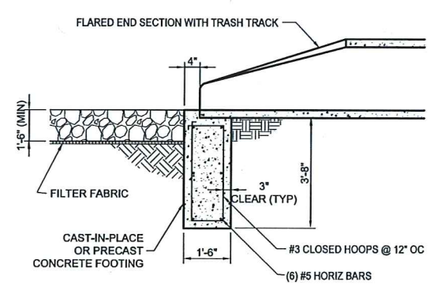
6 C4.1 FIELD TILE REPAIR CONNECTION
NTS



5 C4.1 TYPICAL ROCK LETDOWN STRUCTURE
NTS



7 C3.01 TYPICAL CORE TRENCH SECTION
NTS



4 C4.01 FLARED END SECTION FOOTING w/ RIP-RAP
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DETAILS

C7.02

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