

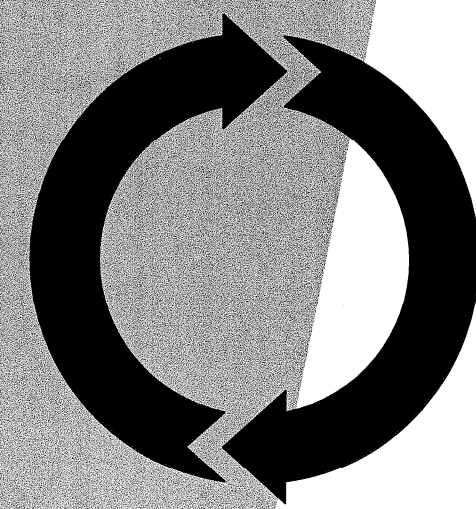
# PHASE II MSW AREA CLOSURE & PHOTOVOLTAIC SYSTEM PROJECT

## HARTFORD LANDFILL

LEIBERT ROAD, HARTFORD, CONNECTICUT

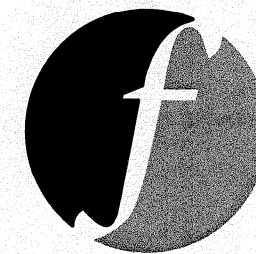
MARCH 5, 2013

PREPARED FOR



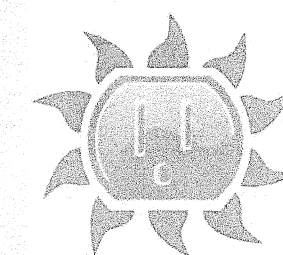
**CONNECTICUT  
RESOURCES  
RECOVERY  
AUTHORITY**

PREPARED BY



**FUSS & O'NEILL**

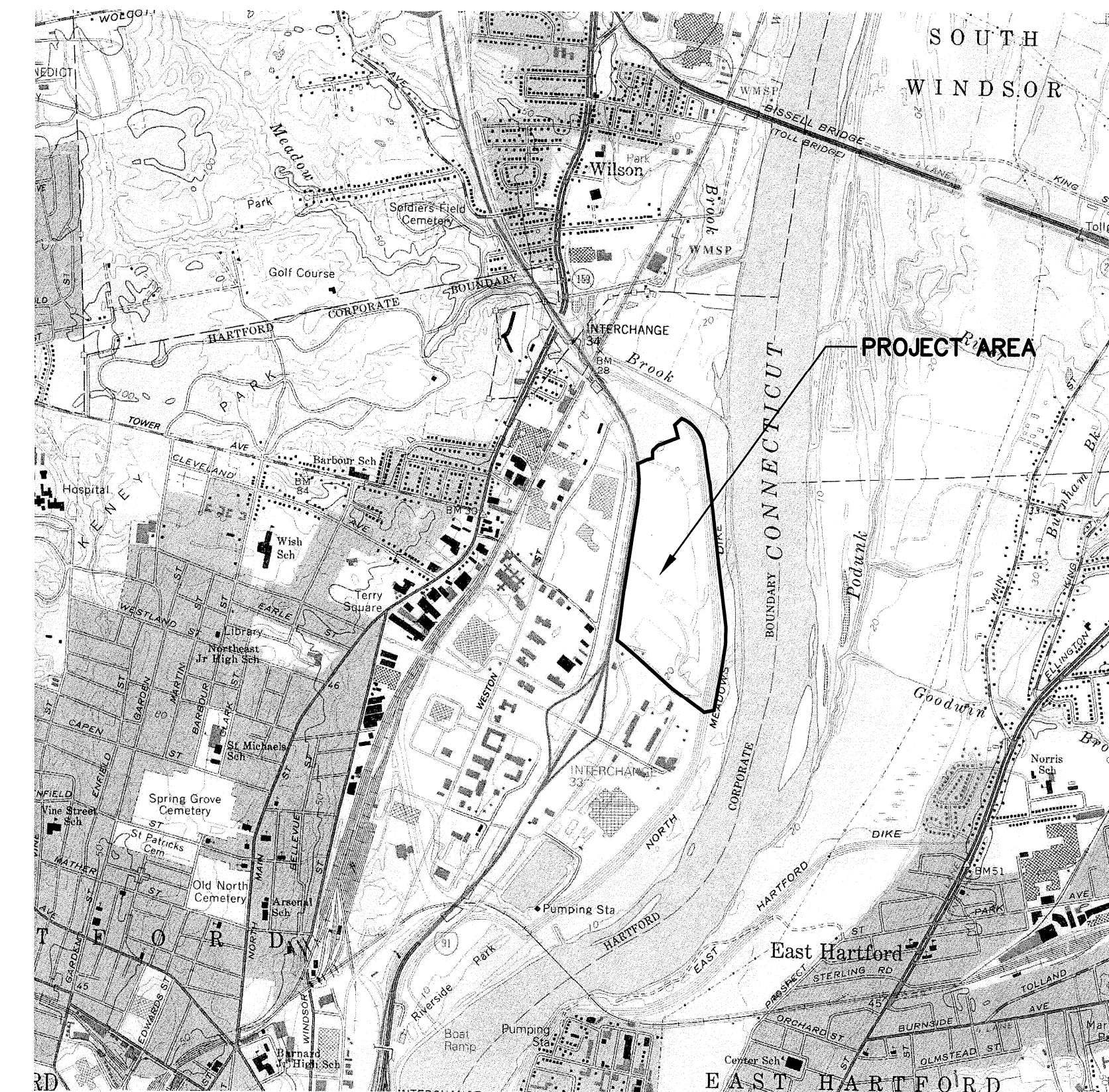
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MANCHESTER, CONNECTICUT 06040  
860.646.2469  
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**HELIO SAGE**  
WISDOM IN SUN

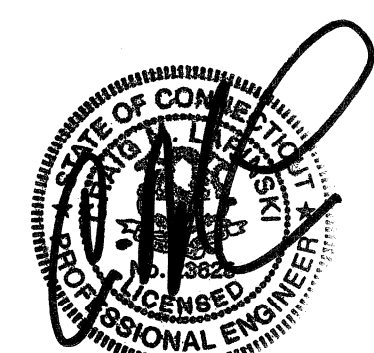
### SHEET INDEX

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**LOCATION MAP**

SCALE: 1" = 2000'



CRAIG M. LAPINSKI, PE, LEED-AP

CT. PE LICENSE NO. 23625

PROJ. No.: 2010 0123 H20  
DATE: 03/05/2013

G-0.01

**CIVIL GENERAL NOTES**

**GENERAL**

- SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SHOWN ON THE DRAWINGS TO SCALE OR TO THEIR ACTUAL DIMENSION OR LOCATION. COORDINATE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
- DO NOT RELY SOLELY ON ELECTRONIC VERSIONS OF DRAWINGS, SPECIFICATIONS, AND DATA FILES THAT ARE PROVIDED BY THE ENGINEER. FIELD VERIFY LOCATION OF PROJECT FEATURES.
- PERFORM NECESSARY CONSTRUCTION NOTIFICATIONS, APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK AS REQUIRED BY THE CONTRACT DOCUMENTS.
- TOPOGRAPHIC ELEVATIONS ARE BASED ON NGVD 29 DATUM.

**WORK RESTRICTIONS**

- DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, FIRE HYDRANTS, AND UTILITIES WITHOUT APPROPRIATE PERMITS.

**REGULATORY REQUIREMENTS**

- WITHIN LOCAL RIGHTS-OF-WAY, PERFORM THE WORK IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS.
- WITHIN STATE RIGHTS-OF-WAY, PERFORM THE WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS AND ISSUED REVISIONS/SUPPLEMENTS.
- PROVIDE TRAFFIC SIGNAGE AND PAVEMENT MARKINGS IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. PERFORM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
- DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.

**EROSION AND SEDIMENT CONTROL**

- INSTALL EROSION CONTROL MEASURES PRIOR TO STARTING ANY WORK ON THE SITE. REFER TO THE EROSION AND SEDIMENT CONTROL DRAWINGS.
- IMPLEMENT ALL NECESSARY MEASURES REQUIRED TO CONTROL STORMWATER RUNOFF, DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE. PERFORM CORRECTIVE ACTION AS NEEDED FOR EROSION CLEANUP AND REPAIRS TO OFF SITE AREAS, IF ANY, AT NO COST TO OWNER.
- INSPECT AND MAINTAIN EROSION CONTROL MEASURES PER THE SCHEDULE IN THE EROSION AND SEDIMENT CONTROL DRAWINGS. DISPOSE OF SEDIMENT IN AN UPLAND AREA. DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
- PERFORM CONSTRUCTION SEQUENCING IN SUCH A MANNER TO CONTROL EROSION AND TO MINIMIZE THE TIME THAT EARTH MATERIALS ARE EXPOSED BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED.
- UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL MEASURES. CLEAN SEDIMENT AND DEBRIS FROM TEMPORARY MEASURES AND FROM PERMANENT STORM DRAIN AND SANITARY SEWER SYSTEMS.

**DEMOLITION**

- REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS, UNLESS OTHERWISE NOTED.

**CONSTRUCTION LAYOUT**

- PROVIDE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED SITE IMPROVEMENTS. FIELD VERIFY EXISTING PAVEMENT AND GROUND ELEVATIONS AT THE INTERFACE WITH PROPOSED PAVEMENTS AND DRAINAGE STRUCTURES BEFORE START OF CONSTRUCTION.
- PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, FIELD VERIFY PROPOSED UTILITY ROUTES AND IDENTIFY ANY INTERFERENCES OR OBSTRUCTIONS WITH EXISTING UTILITIES OR PUBLIC RIGHTS-OF-WAY.
- IMMEDIATELY INFORM THE ENGINEER IN WRITING IF EXISTING UTILITY CONDITIONS CONFLICT OR DIFFER FROM THAT INDICATED AND IF THE WORK CANNOT BE COMPLETED AS INDICATED.
- DIMENSIONS ARE FROM FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS NOTED OTHERWISE.
- BOUNDS OR MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

**EARTHWORK**

- NOTIFY UTILITY LOCATOR SERVICE AT LEAST 72 HOURS BEFORE STARTING EXCAVATION. "CALL BEFORE YOU DIG" AT 1-800-922-4455.

**UTILITIES**

- TERMINATE EXISTING UTILITIES IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. COORDINATE UTILITY SERVICE DISCONNECTS WITH UTILITY REPRESENTATIVES.
- THE TYPE, SIZE AND LOCATION OF DEPICTED UNDERGROUND UTILITIES ARE APPROXIMATE REPRESENTATIONS OF INFORMATION OBTAINED FROM FIELD LOCATIONS OF VISIBLE FEATURES, EXISTING MAPS AND PLANS OF RECORD, UTILITY MAPPING, AND OTHER SOURCES OF INFORMATION OBTAINED BY THE ENGINEER. ASSUME NO GUARANTEE AS TO THE COMPLETENESS, SERVICEABILITY, EXISTENCE, OR ACCURACY OF UNDERGROUND FACILITIES. FIELD VERIFY THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES.

- PAY ALL FEES AND COSTS ASSOCIATED WITH UTILITY MODIFICATIONS AND CONNECTIONS, REGARDLESS OF THE ENTITY THAT PERFORMS THE WORK.
- COORDINATE THE WORK AND WORK SCHEDULE WITH UTILITY COMPANIES. PROVIDE ADEQUATE NOTICE TO UTILITIES TO PREVENT DELAYS IN CONSTRUCTION.

- INTERIOR DIAMETERS OF STORM DRAIN AND SANITARY SEWER STRUCTURES SHALL BE DETERMINED BY THE PRECAST MANUFACTURER, BASED ON THE INDICATED PIPE SYSTEM LAYOUT AND LOCAL MUNICIPAL STANDARDS.

MINIMUM INTERIOR DIAMETERS:  
 0 TO 20 FEET DEEP; 4 FEET.  
 20 FEET OR GREATER; 5 FEET.

- RIM ELEVATIONS FOR MANHOLES, VALVE COVERS, GATE AND PULL BOXES, AND OTHER STRUCTURES ARE APPROXIMATE. SET OR RESET RIM ELEVATIONS AS FOLLOWS:

IN PAVEMENTS AND CONCRETE SURFACES: FLUSH  
 IN SURFACES ALONG ACCESSIBLE ROUTES: FLUSH  
 IN LANDSCAPE, SEEDED, AND OTHER EARTH SURFACE AREAS:  
 1 INCH ABOVE SURROUNDING AREA; TAPER EARTH TO RIM ELEVATION.

- INSTALL PROPOSED PRIVATE UTILITY SERVICES ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY THE AUTHORITY HAVING JURISDICTION (WATER, SEWER, GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). COORDINATE FINAL DESIGN LOADS AND LOCATIONS WITH OWNER AND ARCHITECT.

**PAVEMENT**

- AT A MINIMUM, CONSTRUCT ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).

**SITE RESTORATION**

- PROVIDE 6 INCHES OF TOPSOIL AND SEED TO AREAS DISTURBED DURING CONSTRUCTION AND NOT DESIGNATED TO BE RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) OR LINER UNLESS OTHERWISE NOTED.
- REPAIR DAMAGES RESULTING FROM CONSTRUCTION LOADS, AT NO ADDITIONAL COST TO OWNER.
- RESTORE AREAS DISTURBED BY CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION OR BETTER, AT NO ADDITIONAL COST TO OWNER.

**MAP REFERENCES**

- TOPOGRAPHIC AND PLANIMETRIC FEATURES TAKEN FROM A MAP ENTITLED: TOPOGRAPHIC SURVEY, PREPARED FOR, CONNECTICUT RESOURCES RECOVERY AUTHORITY, HARTFORD LANDFILL, HARTFORD, CT, BY FUSS & O'NEILL, SCALE: 1"=100', DATED 2/13/2013.
- LANDFILL GAS COLLECTION SYSTEM FEATURES TAKEN FROM "LFG COLLECTION SYSTEM, PLATE 2" (WITH REVISIONS) PREPARED BY SCS ENGINEERS, PC, DATED 4/29/11, RECEIVED ELECTRONICALLY FROM ORRA ON 7/7/11.
- ASH DISPOSAL AREA LINER AND VENT LOCATIONS DIGITIZED FROM MAP ENTITLED "AS-BUILT SITE PLAN, PHASE 1 ASH AREA BASE LINER EXTENSION" BY KARL F. ACIMOVIC, P.E. & L.S., DATED 10/18/04.
- GROUNDWATER CONTROL SYSTEM FEATURES TAKEN FROM MAP ENTITLED "AS-BUILT CUTOFF WALL - SITE PLAN, GROUNDWATER FLOW CONTROL SYSTEM, HARTFORD LANDFILL" BY WOODWARD-CLYDE, DATED 10/07/97.
- MDC AND CL&P EASEMENT LOCATIONS TAKEN FROM MAP ENTITLED "PERIMETER SURVEY, HARTFORD LANDFILL" BY FUSS & O'NEILL, INC., DATED 12/19/97.
- CERTAIN TOPOGRAPHIC AND PLANIMETRIC FEATURES, AS WELL AS SPOT ELEVATIONS AND INVERTS, FIELD VERIFIED BY FUSS & O'NEILL, INC. ON 03/07/06, 03/08/06, 03/31/06, AND 04/19/06.
- CERTAIN PLANIMETRIC FEATURES TAKEN FROM A MAP ENTITLED: AS-BUILT PLAN OF 2009 CLOSURE IN HARTFORD, CT PREPARED FOR R.BATES & SONS, INC. SCALE 1"=50' DATED NOVEMBER 30, 2011.

**LEGEND**

EXISTING		PROPOSED
	ABOVE CAP ELECTRICAL LINE	
	OVERHEAD ELECTRICAL LINE	
	UNDERGROUND ELECTRICAL LINE WITH HANDHOLE	
	LEACHATE FORCE-MAIN WITH CLEANOUTS	
	CONDENSATE FORCE-MAIN	
	AIRLINE	
	WATER SERVICE LINE	
	SANITARY SEWER LINE AND MANHOLE	
	SLURRY WALL	
	CHAINLINK FENCE	
	GUIDE RAIL	
	LFG HEADER & LATERAL	
	LFG COLLECTOR	
	ABANDONED HEADER	
	PROPERTY LINE	
	EASEMENT LINE	
	EDGE OF WATER	
	EDGE OF ASH AREA LINER	
	INDEX (10') CONTOUR	
	INTERMEDIATE (2') CONTOUR	
	LANDFILL LIMIT LINE (WITH MARKER)	
	DIVERSION SWALE	
	SILT FENCE	
	HAYBALES	
	MONITORING WELL	
	PIEZOMETER	
	LANDFILL GAS MONITORING WELL	
	LANDFILL GAS EXTRACTION WELL (EXISTING)	
	LANDFILL GAS REMOTE WELLHEAD	
	LANDFILL GAS MIGRATION CONTROL WELL	
	LANDFILL GAS CONTROL VALVE	
	PASSIVE GAS VENT	
	GROUNDWATER CONTROL PUMPING WELL	
	HYDRANT	
	WATER VALVE	
	PERMANENT SURVEY MONUMENT (WITH ELEVATION)	
	SPOT ELEVATION / INVERT	
	LANDFILL LIMIT MARKER	

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GRAPHIC SCALE

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CONNECTICUT RESOURCES RECOVERY AUTHORITY

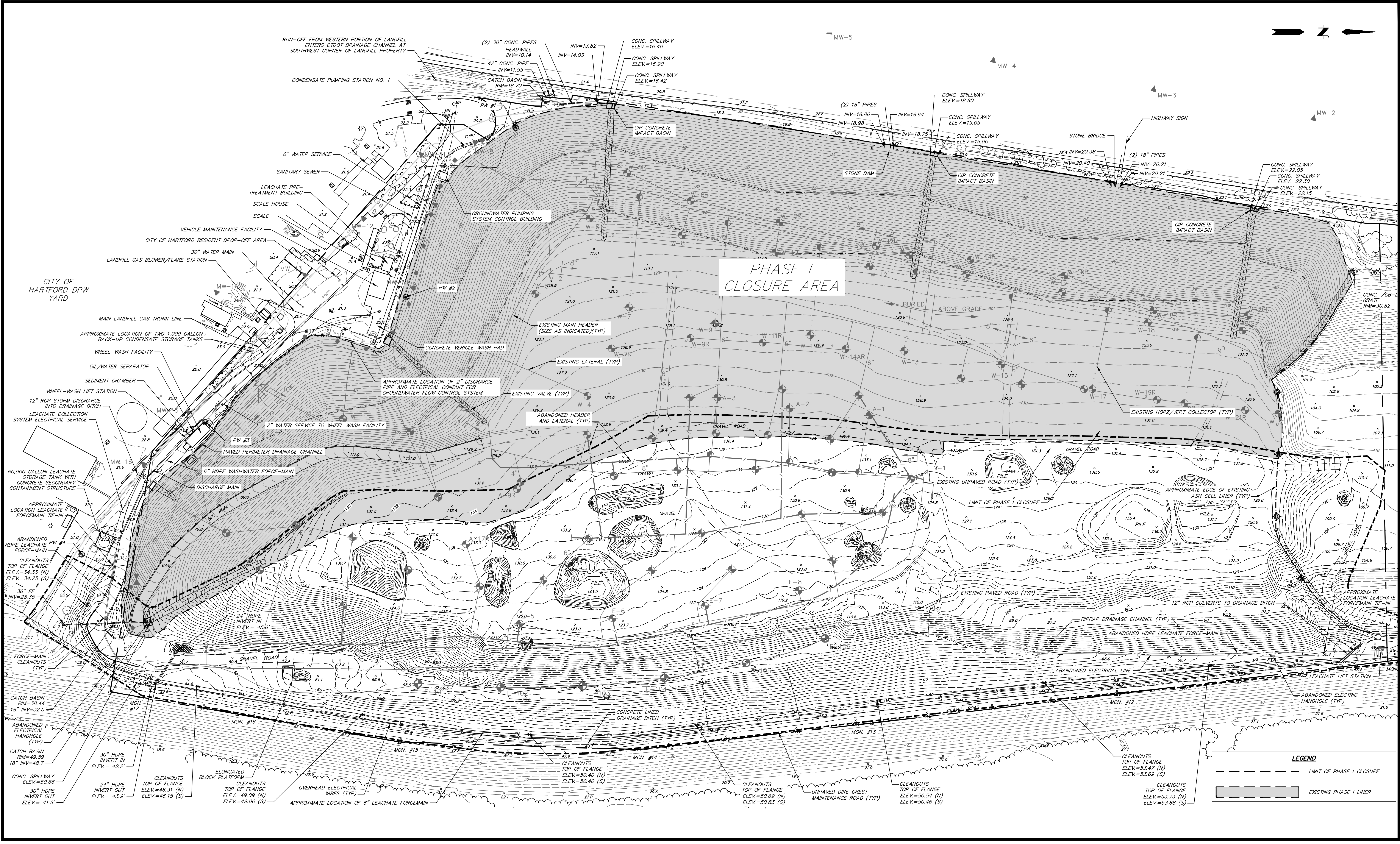
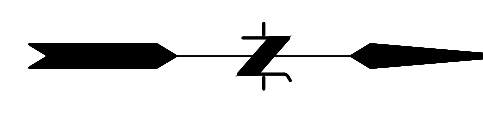
GENERAL NOTES

PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT

HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013

**G-0.02**



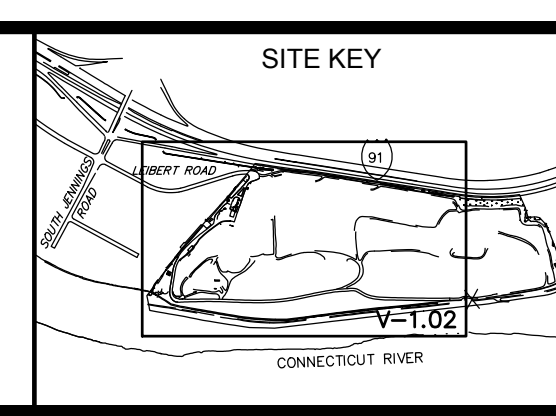
**LEGEND**

	LIMIT OF PHASE I CLOSURE
	EXISTING PHASE I LINER

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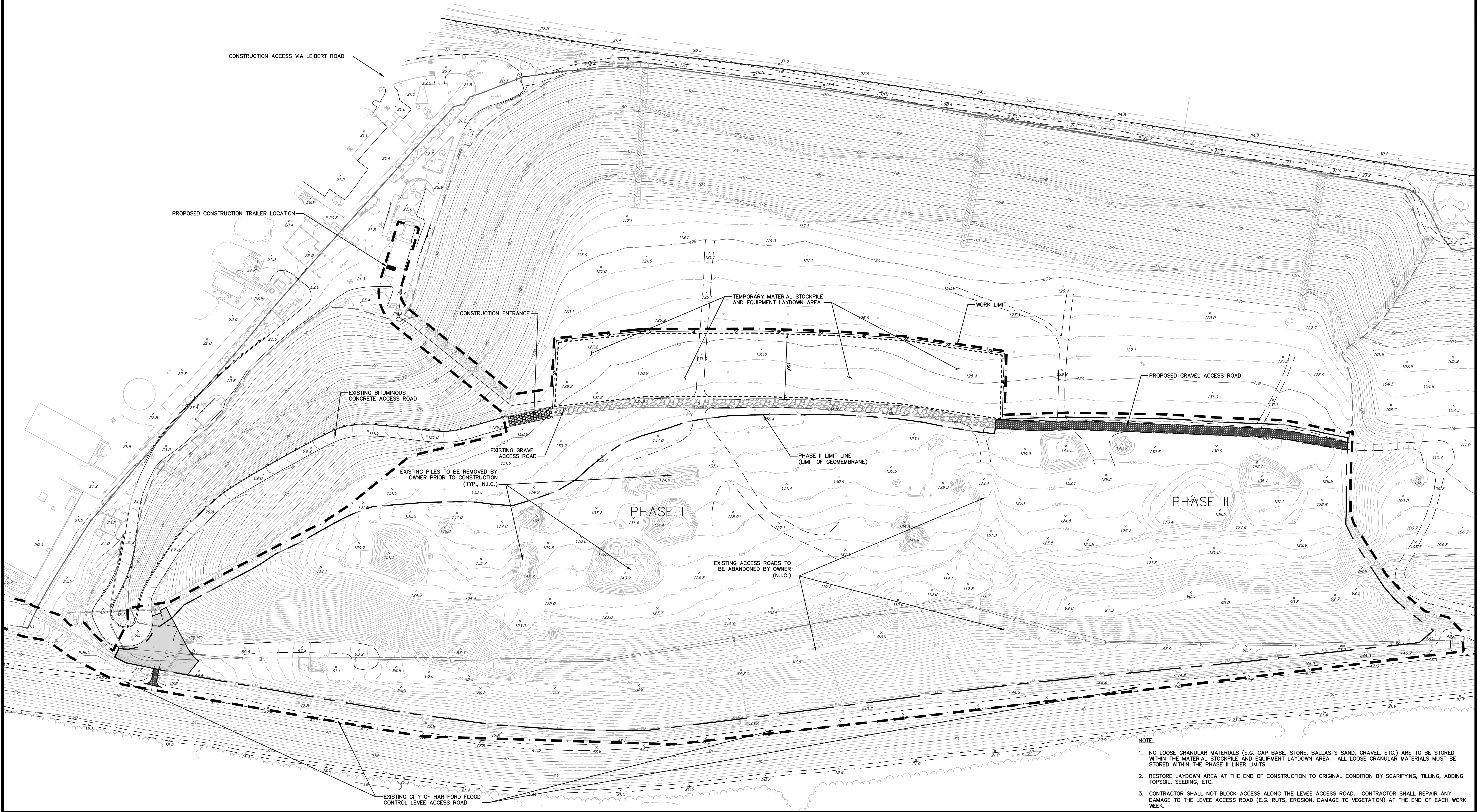
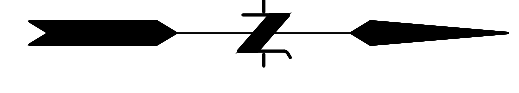
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 VERT.:  
 HORIZ.: NAD 27  
 VERT.: NGVD 29

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**GRAPHIC SCALE**

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CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 EXISTING CONDITIONS MAP  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**V-1.02**



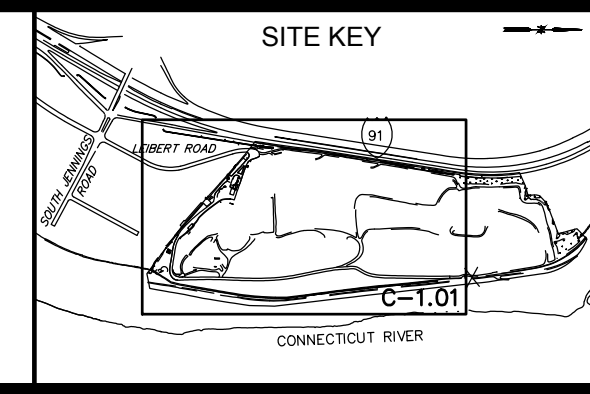
- NOTE:
1. NO LOOSE GRANULAR MATERIALS (E.G. CAP BASE, STONE, BALLASTS SAND, GRAVEL, ETC.) ARE TO BE STORED WITHIN THE MATERIAL STOCKPILE AND EQUIPMENT LAYDOWN AREA. ALL LOOSE GRANULAR MATERIALS MUST BE STORED WITHIN THE PHASE II LINER LIMITS.
  2. RESTORE LAYDOWN AREA AT THE END OF CONSTRUCTION TO ORIGINAL CONDITION BY SCARIFYING, TILLING, ADDING TOPSOIL, SEEDING, ETC.
  3. CONTRACTOR SHALL NOT BLOCK ACCESS ALONG THE LEVEE ACCESS ROAD. CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE LEVEE ACCESS ROAD (E.G. RUTS, EROSION, DAMAGE TO VEGETATION) AT THE END OF EACH WORK WEEK.

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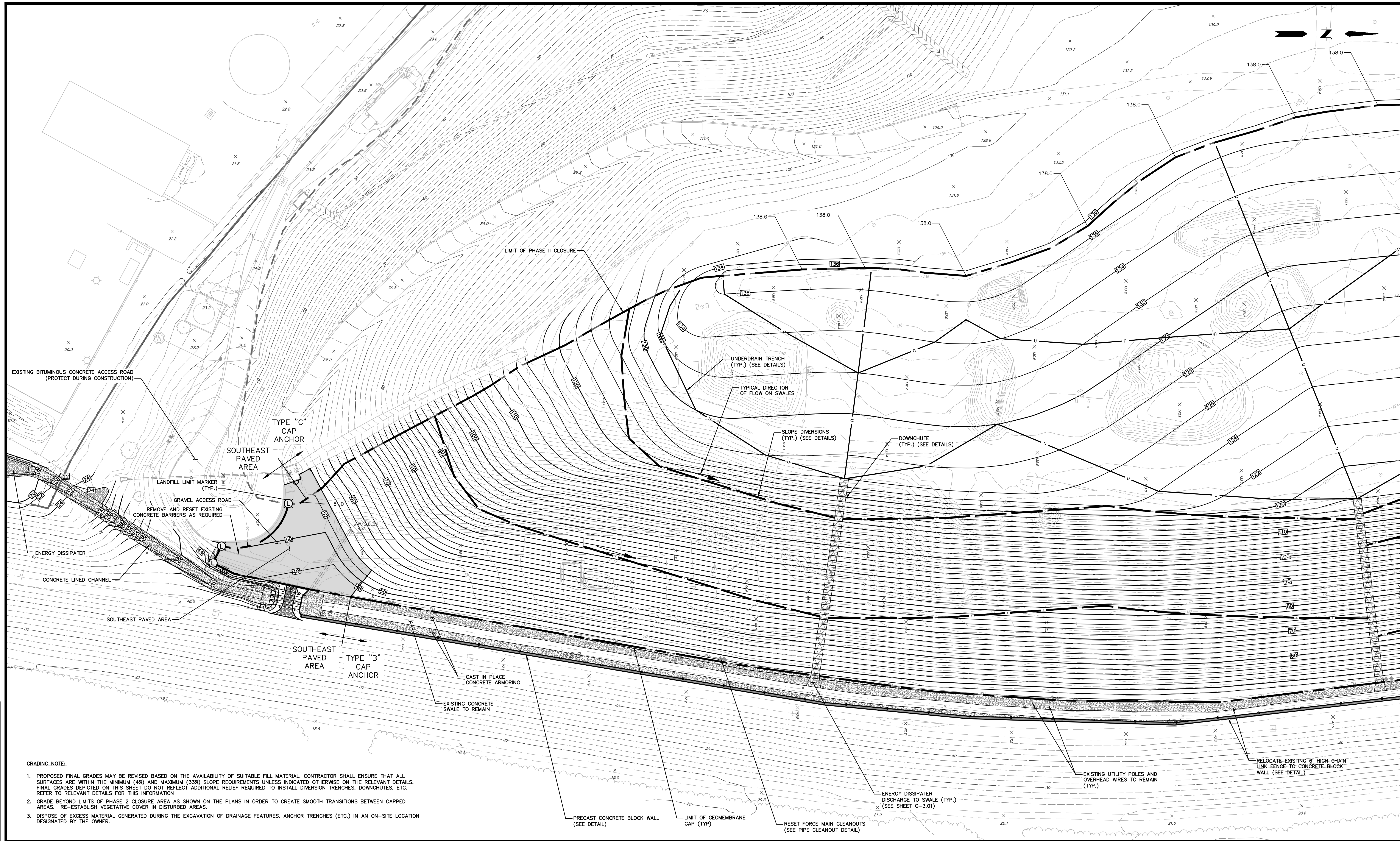
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 HORIZ.: NAD 27  
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 GRAPHIC SCALE

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CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 ACCESS PLAN  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**C-1.01**

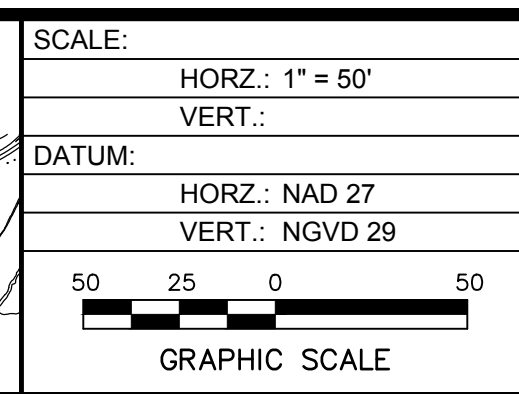
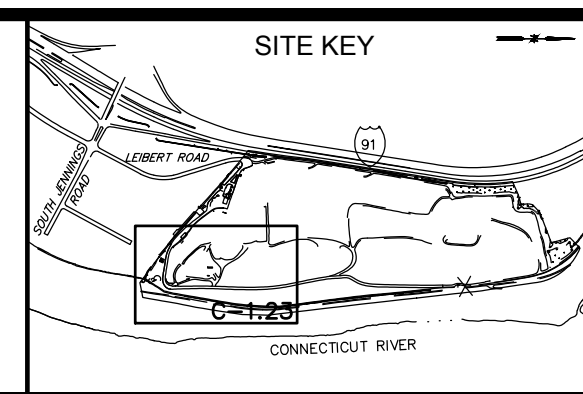
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- GRADING NOTE:**
1. PROPOSED FINAL GRADES MAY BE REVISED BASED ON THE AVAILABILITY OF SUITABLE FILL MATERIAL. CONTRACTOR SHALL ENSURE THAT ALL SURFACES ARE WITHIN THE MINIMUM (4%) AND MAXIMUM (33%) SLOPE REQUIREMENTS UNLESS INDICATED OTHERWISE ON THE RELEVANT DETAILS. FINAL GRADES DEPICTED ON THIS SHEET DO NOT REFLECT ADDITIONAL RELIEF REQUIRED TO INSTALL DIVERSION TRENCHES, DOWNCHUTES, ETC. REFER TO RELEVANT DETAILS FOR THIS INFORMATION.
  2. GRADE BEYOND LIMITS OF PHASE 2 CLOSURE AREA AS SHOWN ON THE PLANS IN ORDER TO CREATE SMOOTH TRANSITIONS BETWEEN CAPPED AREAS. RE-ESTABLISH VEGETATIVE COVER IN DISTURBED AREAS.
  3. DISPOSE OF EXCESS MATERIAL GENERATED DURING THE EXCAVATION OF DRAINAGE FEATURES, ANCHOR TRENCHES (ETC.) IN AN ON-SITE LOCATION DESIGNATED BY THE OWNER.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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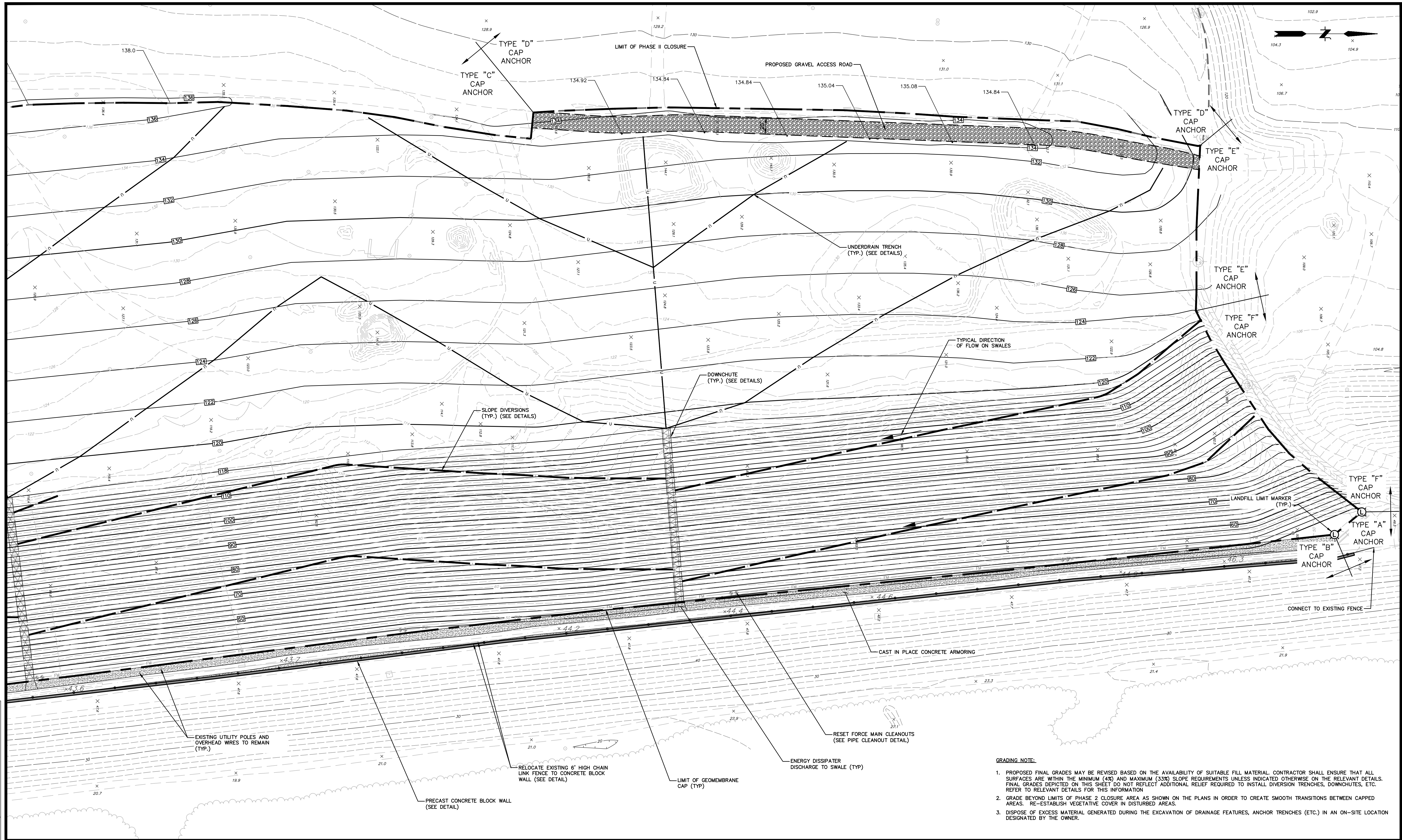
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 FINAL GRADING PLAN  
 CLOSURE TURF ALTERNATIVE  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**C-1.23**

SEE SHEET C-1.24

SEE SHEET C-1.23

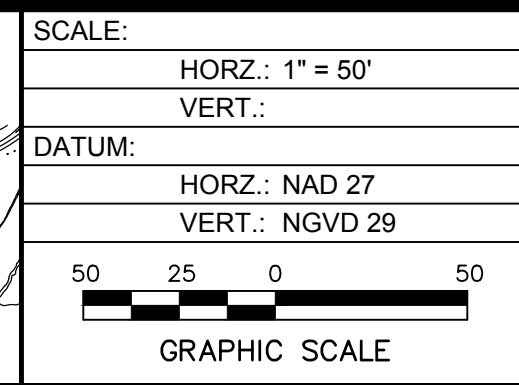
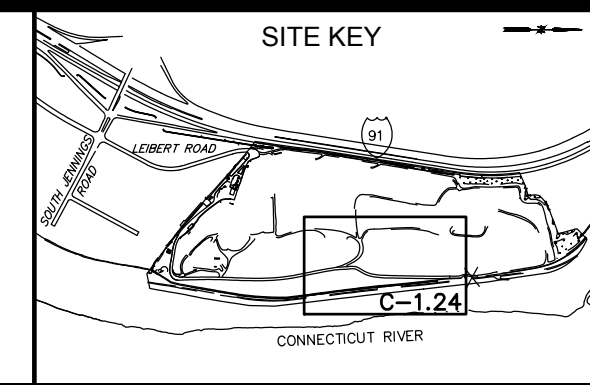
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- GRADING NOTE:**
1. PROPOSED FINAL GRADES MAY BE REVISED BASED ON THE AVAILABILITY OF SUITABLE FILL MATERIAL. CONTRACTOR SHALL ENSURE THAT ALL SURFACES ARE WITHIN THE MINIMUM (4%) AND MAXIMUM (3%) SLOPE REQUIREMENTS UNLESS INDICATED OTHERWISE ON THE RELEVANT DETAILS. FINAL GRADES DEPICTED ON THIS SHEET DO NOT REFLECT ADDITIONAL RELIEF REQUIRED TO INSTALL DIVERSION TRENCHES, DOWNCHUTES, ETC. REFER TO RELEVANT DETAILS FOR THIS INFORMATION.
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SEAL	SEAL	
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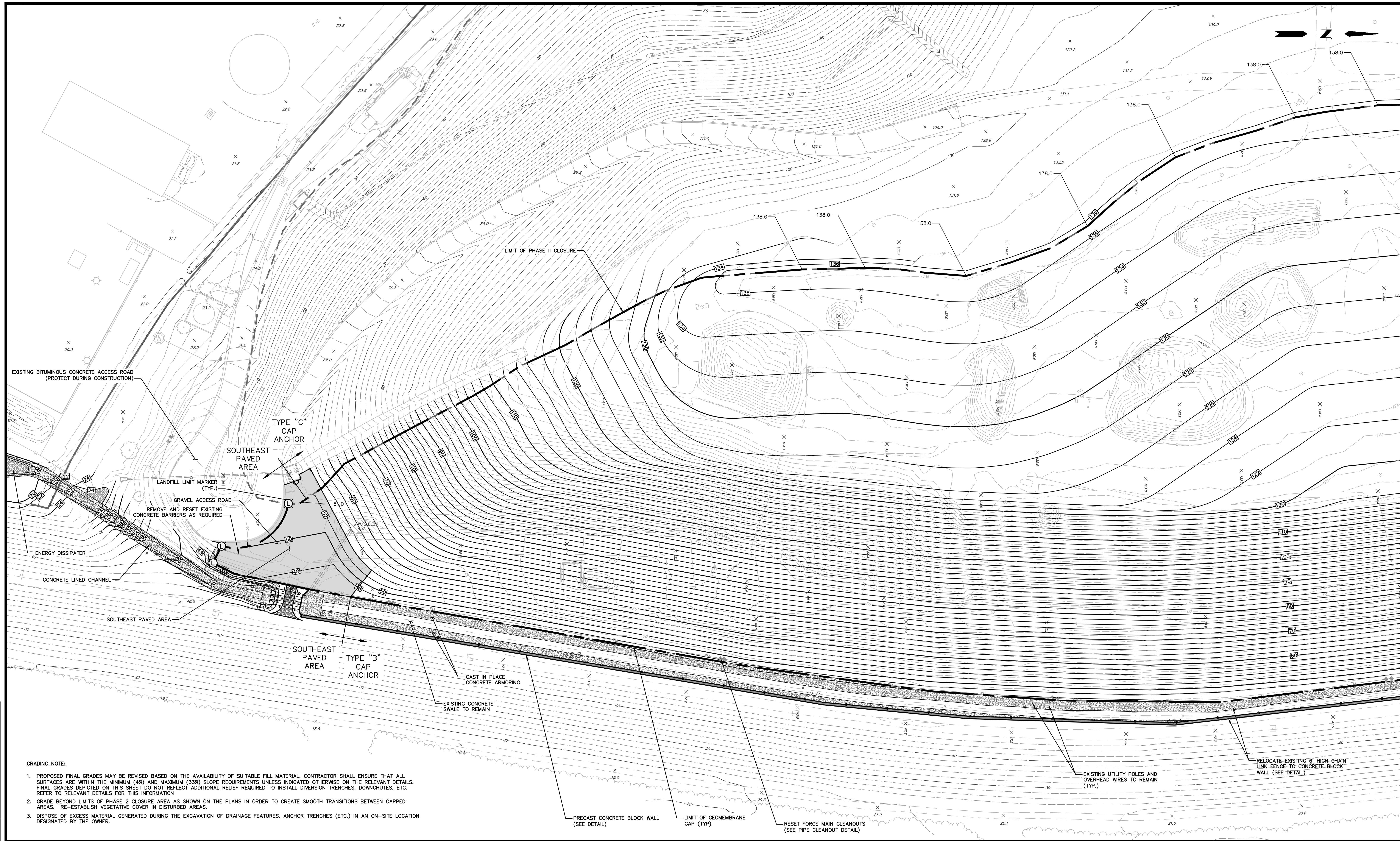


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 FINAL GRADING PLAN  
 CLOSURE TURF ALTERNATIVE  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
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**C-1.24**

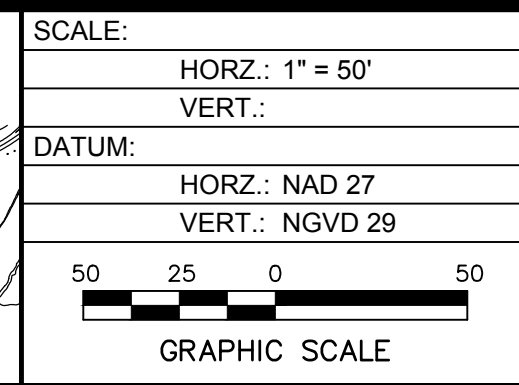
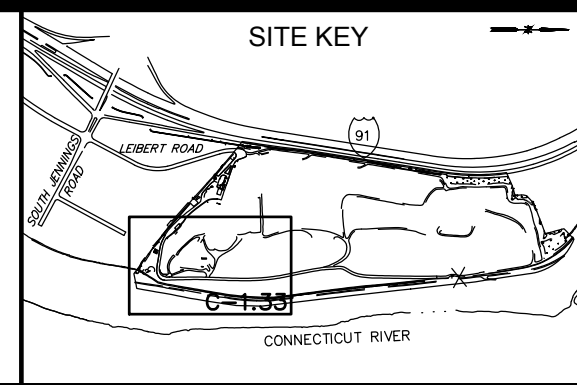
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 MS VIEW: LAYER STATE:



- GRADING NOTE:**
1. PROPOSED FINAL GRADES MAY BE REVISED BASED ON THE AVAILABILITY OF SUITABLE FILL MATERIAL. CONTRACTOR SHALL ENSURE THAT ALL SURFACES ARE WITHIN THE MINIMUM (4%) AND MAXIMUM (33%) SLOPE REQUIREMENTS UNLESS INDICATED OTHERWISE ON THE RELEVANT DETAILS. FINAL GRADES DEPICTED ON THIS SHEET DO NOT REFLECT ADDITIONAL RELIEF REQUIRED TO INSTALL DIVERSION TRENCHES, DOWNCHUTES, ETC. REFER TO RELEVANT DETAILS FOR THIS INFORMATION.
  2. GRADE BEYOND LIMITS OF PHASE 2 CLOSURE AREA AS SHOWN ON THE PLANS IN ORDER TO CREATE SMOOTH TRANSITIONS BETWEEN CAPPED AREAS. RE-ESTABLISH VEGETATIVE COVER IN DISTURBED AREAS.
  3. DISPOSE OF EXCESS MATERIAL GENERATED DURING THE EXCAVATION OF DRAINAGE FEATURES, ANCHOR TRENCHES (ETC.) IN AN ON-SITE LOCATION DESIGNATED BY THE OWNER.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.				

SEAL	SEAL	
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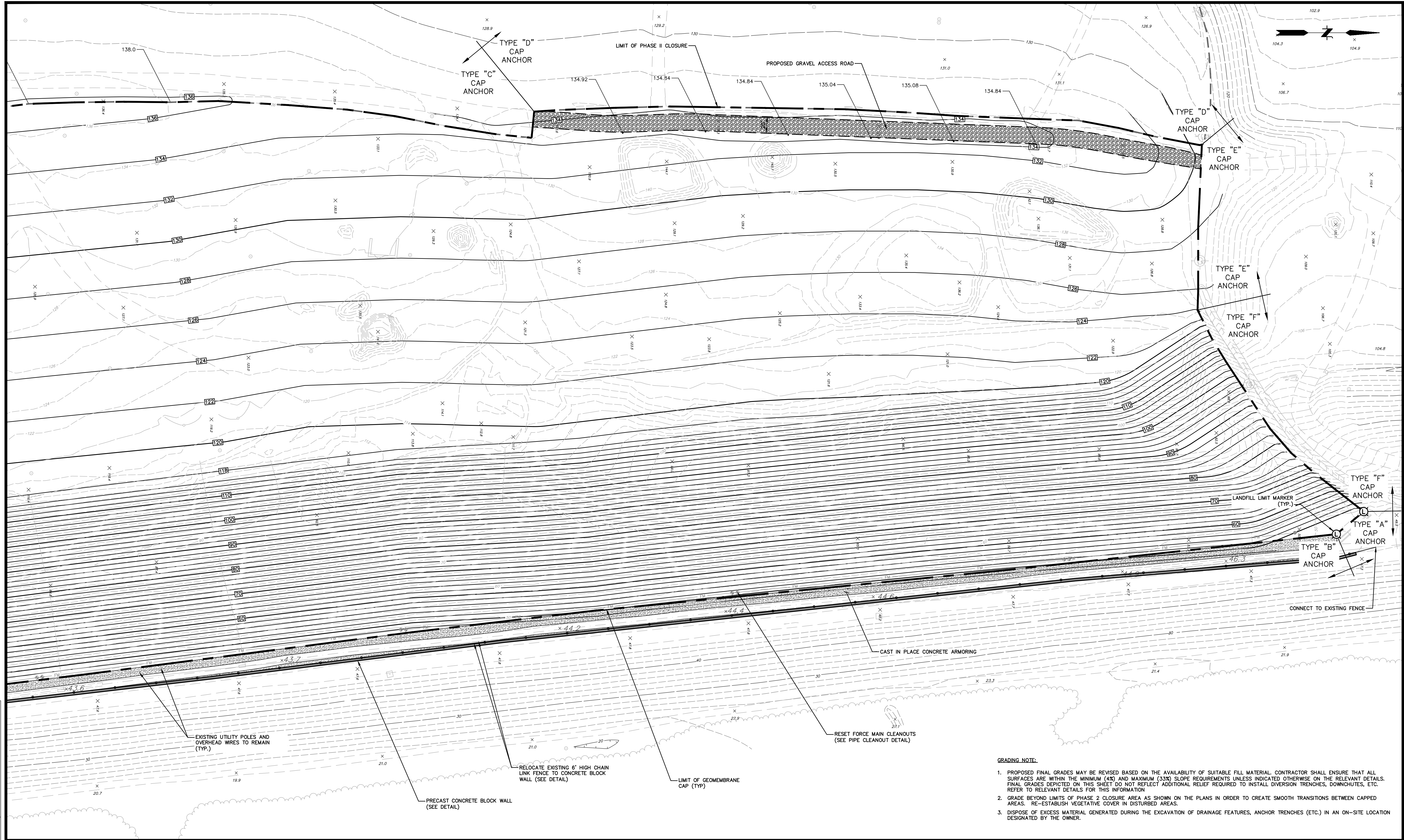
CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 FINAL GRADING PLAN  
 EXPOSED TPO ALTERNATIVE  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**C-1.33**

SEE SHEET C-1.34

SEE SHEET C-1.33

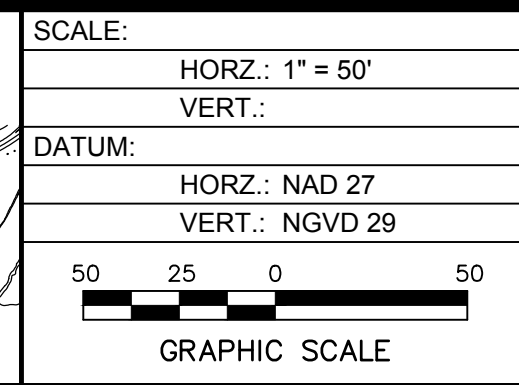
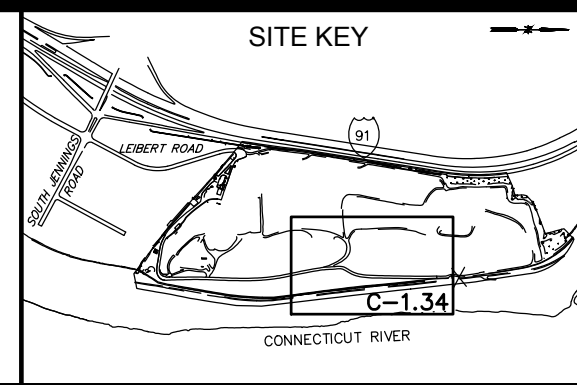
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 LAYER STATE:



- GRADING NOTE:**
1. PROPOSED FINAL GRADES MAY BE REVISED BASED ON THE AVAILABILITY OF SUITABLE FILL MATERIAL. CONTRACTOR SHALL ENSURE THAT ALL SURFACES ARE WITHIN THE MINIMUM (4%) AND MAXIMUM (3%) SLOPE REQUIREMENTS UNLESS INDICATED OTHERWISE ON THE RELEVANT DETAILS. FINAL GRADES DEPICTED ON THIS SHEET DO NOT REFLECT ADDITIONAL RELIEF REQUIRED TO INSTALL DIVERSION TRENCHES, DOWNGUTES, ETC. REFER TO RELEVANT DETAILS FOR THIS INFORMATION.
  2. GRADE BEYOND LIMITS OF PHASE 2 CLOSURE AREA AS SHOWN ON THE PLANS IN ORDER TO CREATE SMOOTH TRANSITIONS BETWEEN CAPPED AREAS. RE-ESTABLISH VEGETATIVE COVER IN DISTURBED AREAS.
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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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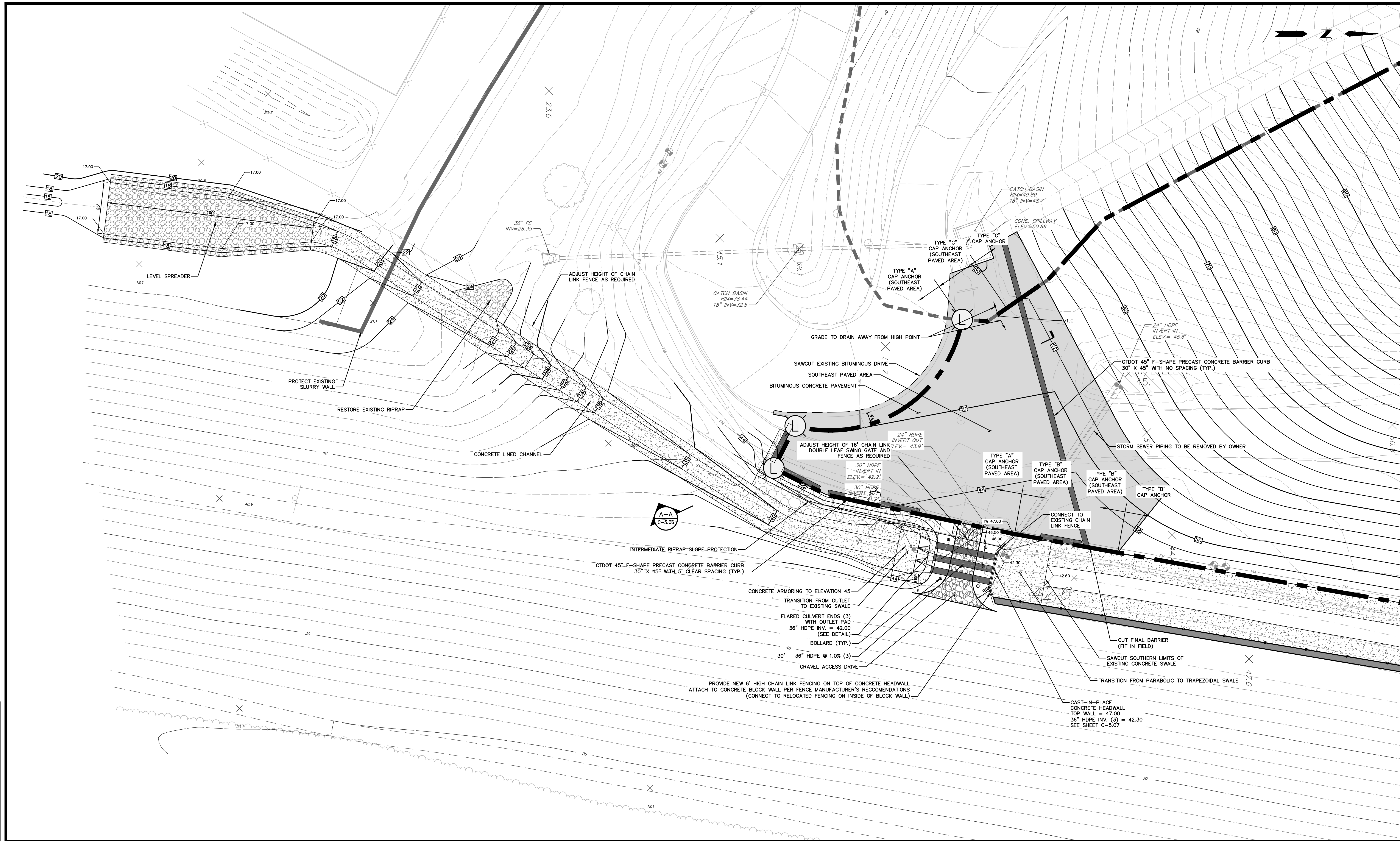
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CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 FINAL GRADING PLAN  
 EXPOSED TPO ALTERNATIVE  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**C-1.34**

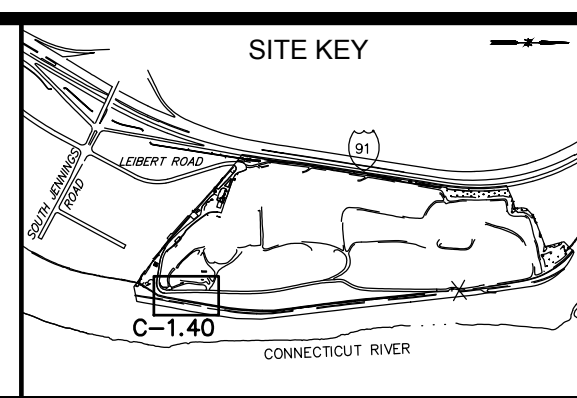


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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SCALE:

HORIZ.: 1" = 20'

VERT.: NGVD 29

DATUM:

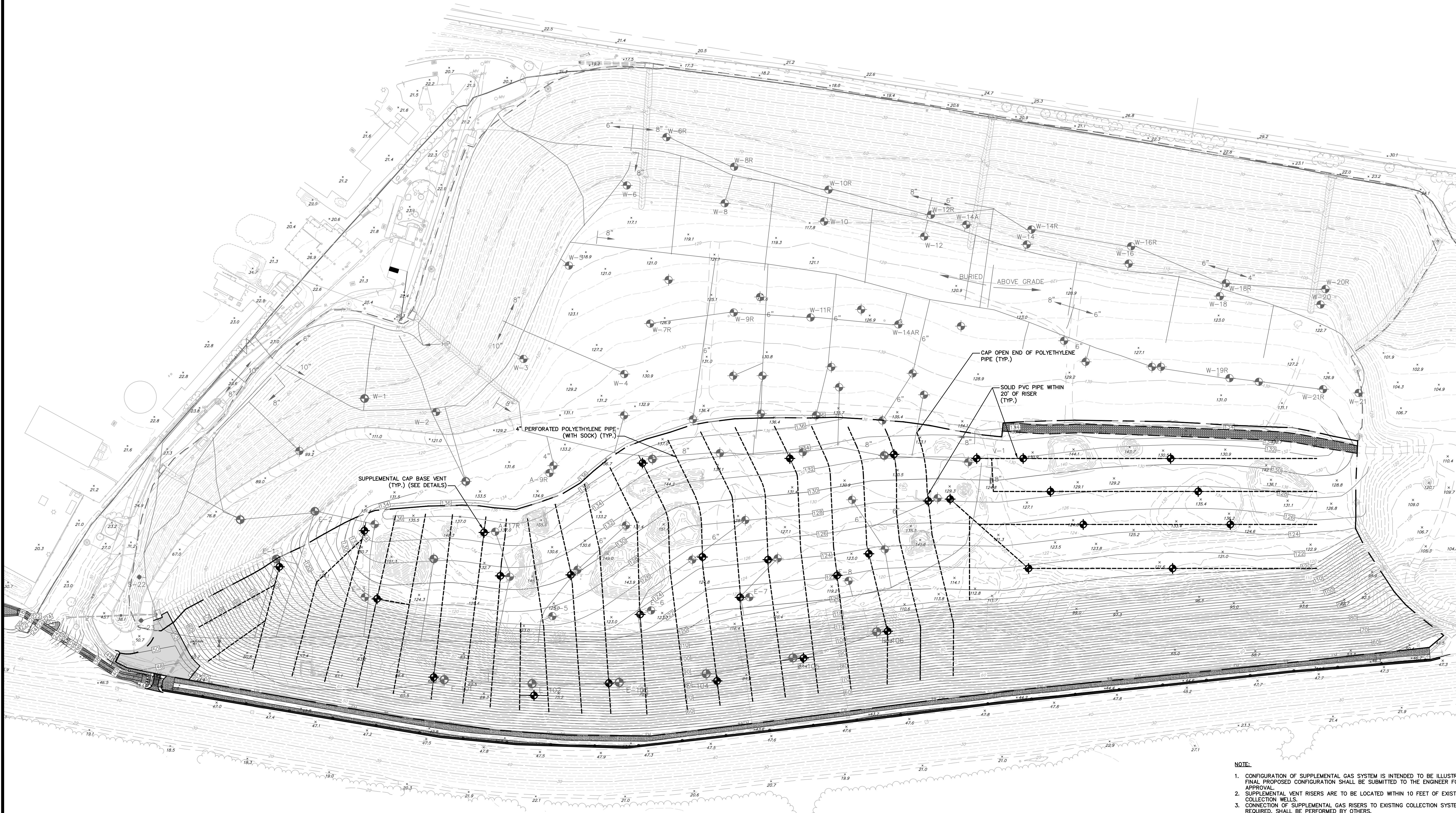
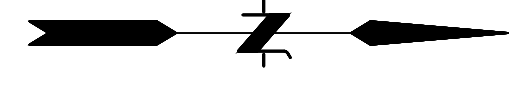
HORIZ.: NAD 27

VERT.: NGVD 29

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CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 DRAINAGE OUTFALL IMPROVEMENT PLAN  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**C-1.40**



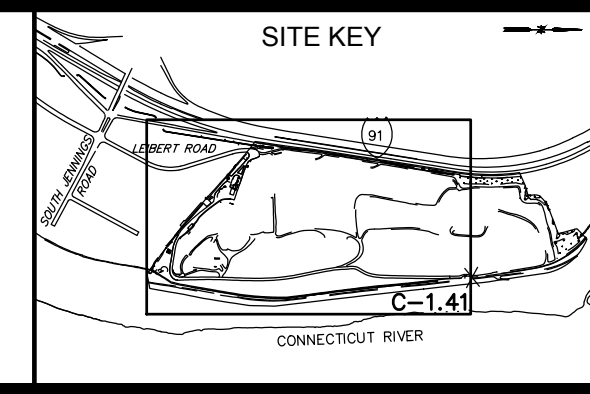
**NOTE:**

1. CONFIGURATION OF SUPPLEMENTAL GAS SYSTEM IS INTENDED TO BE ILLUSTRATIVE. FINAL PROPOSED CONFIGURATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. SUPPLEMENTAL VENT RISERS ARE TO BE LOCATED WITHIN 10 FEET OF EXISTING GAS COLLECTION WELLS.
3. CONNECTION OF SUPPLEMENTAL GAS RISERS TO EXISTING COLLECTION SYSTEM, IF REQUIRED, SHALL BE PERFORMED BY OTHERS.

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 MS VIEW: LAYER STATE: CTB File: FC 2008 MONO.CTB

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

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SCALE:  
 HORZ.: 1" = 100'  
 VERT.:  
 DATUM:  
 HORZ.: NAD 27  
 VERT.: NGVD 29

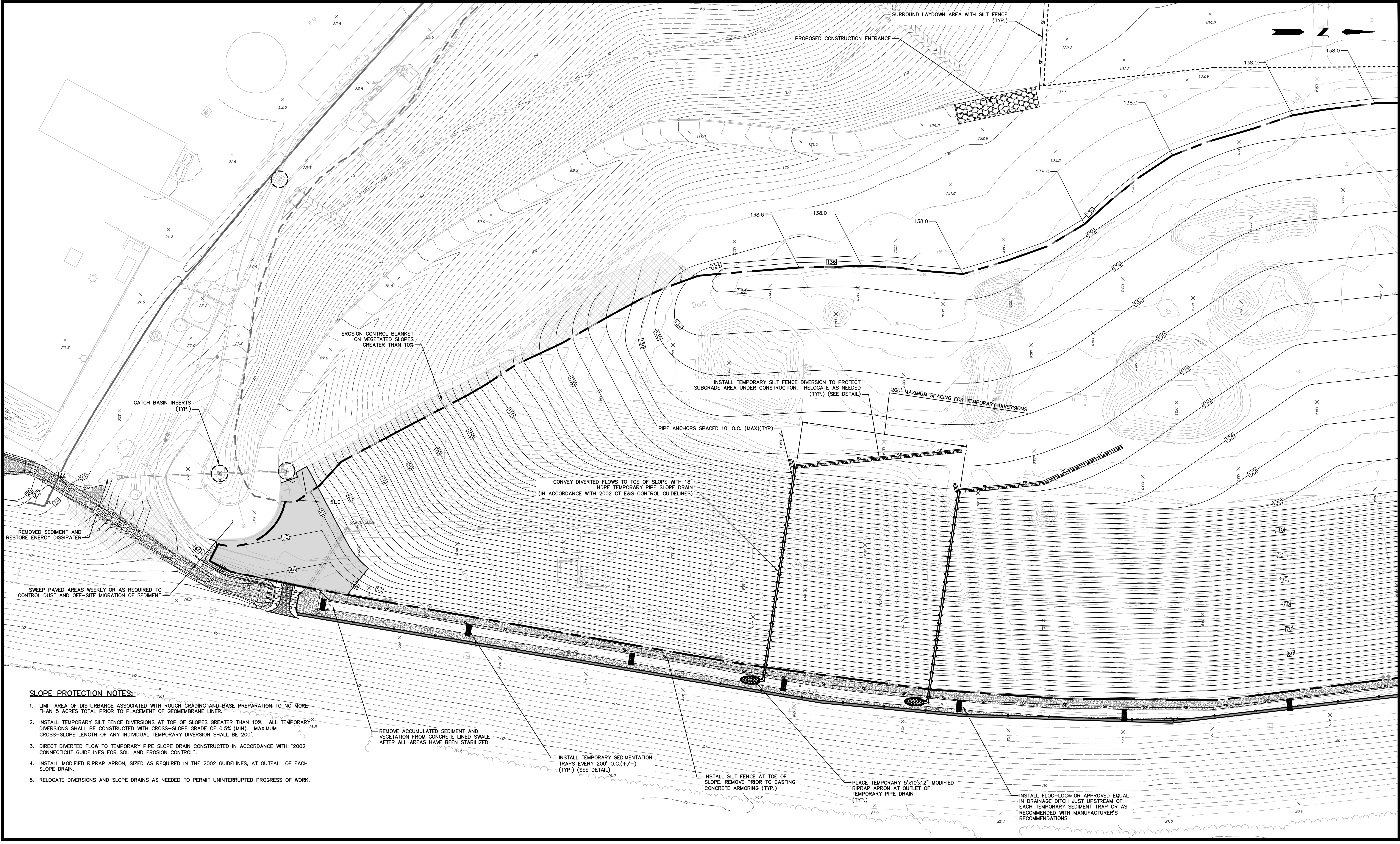
GRAPHIC SCALE

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CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 SUPPLEMENTAL GAS SYSTEM PLAN  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**C-1.41**

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**SLOPE PROTECTION NOTES:**

1. LIMIT AREA OF DISTURBANCE ASSOCIATED WITH ROUGH GRADING AND BASE PREPARATION TO NO MORE THAN 5 ACRES TOTAL PRIOR TO PLACEMENT OF GEOMEMBRANE LINER.
2. INSTALL TEMPORARY SILT FENCE DIVERSIONS AT TOP OF SLOPES GREATER THAN 10%. ALL TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED WITH CROSS-SLOPE GRADE OF 0.5% (MIN). MAXIMUM CROSS-SLOPE LENGTH OF ANY INDIVIDUAL TEMPORARY DIVERSION SHALL BE 200'.
3. DIRECT DIVERTED FLOW TO TEMPORARY PIPE SLOPE DRAIN CONSTRUCTED IN ACCORDANCE WITH "2002 CONNECTICUT GUIDELINES FOR SOIL AND EROSION CONTROL".
4. INSTALL MODIFIED RIPRAP APRON, SIZED AS REQUIRED IN THE 2002 GUIDELINES, AT OFFFALL OF EACH SLOPE DRAIN.
5. RELOCATE DIVERSIONS AND SLOPE DRAINS AS NEEDED TO PERMIT UNINTERRUPTED PROGRESS OF WORK.

REMOVE ACCUMULATED SEDIMENT AND VEGETATION FROM CONCRETE LINED SWALE AFTER ALL AREAS HAVE BEEN STABILIZED

INSTALL TEMPORARY SEDIMENTATION TRAPS EVERY 200' O.C.(+/-) (TYP.) (SEE DETAIL)

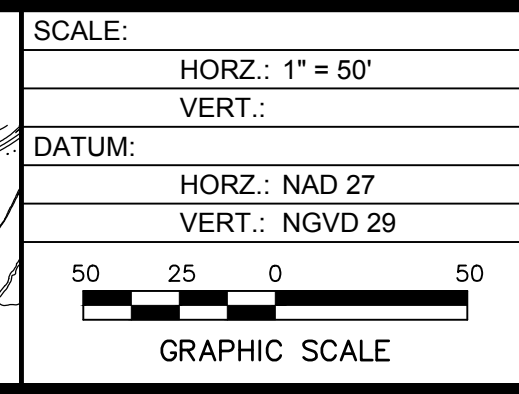
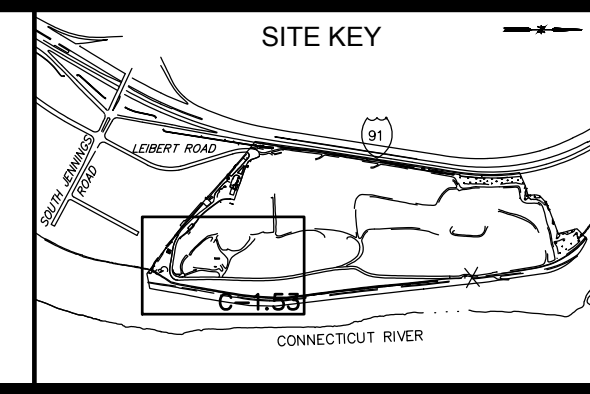
INSTALL SILT FENCE AT TOE OF SLOPE. REMOVE PRIOR TO CASTING CONCRETE ARMORING (TYP.)

PLACE TEMPORARY 5'x10'x12" MODIFIED RIPRAP APRON AT OUTLET OF TEMPORARY PIPE DRAIN (TYP.)

INSTALL FLOC-LOG® OR APPROVED EQUAL IN DRAINAGE DITCH JUST UPSTREAM OF EACH TEMPORARY SEDIMENT TRAP OR AS RECOMMENDED WITH MANUFACTURER'S RECOMMENDATIONS

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.				

SEAL	SEAL	
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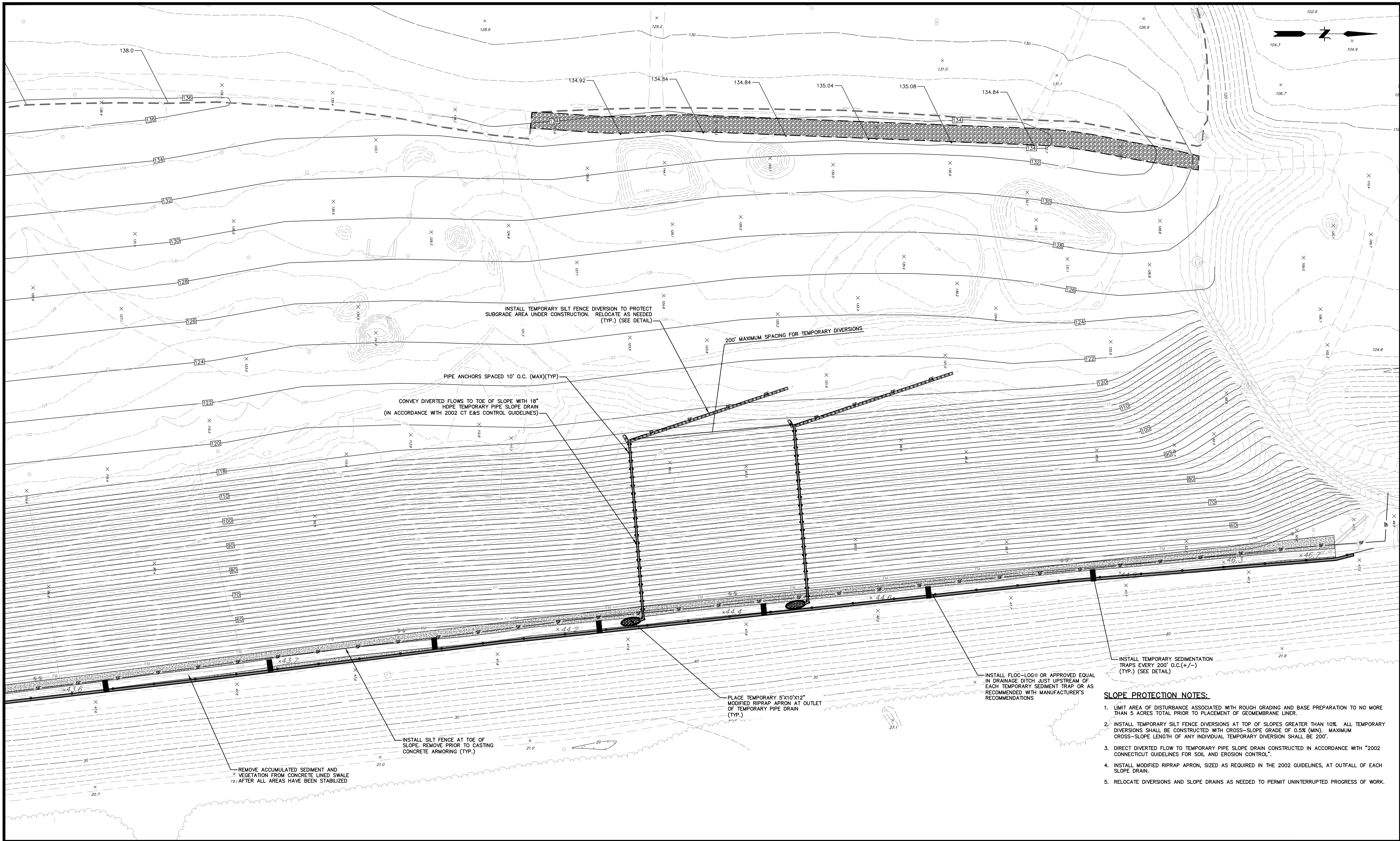
CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 EROSION & SEDIMENT CONTROL PLAN  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**C-1.53**

SEE SHEET C-1.54

SEE SHEET C-1.53

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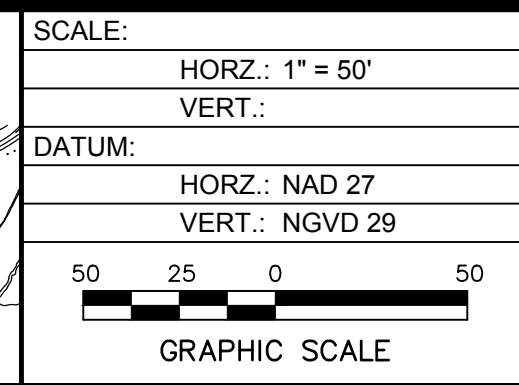
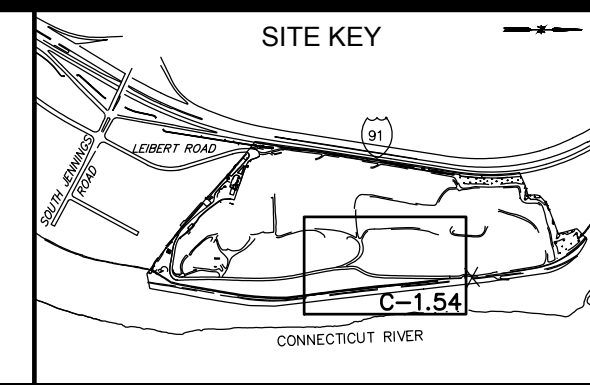
**SLOPE PROTECTION NOTES:**

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2. INSTALL TEMPORARY SILT FENCE DIVERSIONS AT TOP OF SLOPES GREATER THAN 10%. ALL TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED WITH CROSS-SLOPE GRADE OF 0.5% (MIN). MAXIMUM CROSS-SLOPE LENGTH OF ANY INDIVIDUAL TEMPORARY DIVERSION SHALL BE 200'.
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4. INSTALL MODIFIED RIPRAP APRON, SIZED AS REQUIRED IN THE 2002 GUIDELINES, AT OUTFALL OF EACH SLOPE DRAIN.
5. RELOCATE DIVERSIONS AND SLOPE DRAINS AS NEEDED TO PERMIT UNINTERRUPTED PROGRESS OF WORK.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.				

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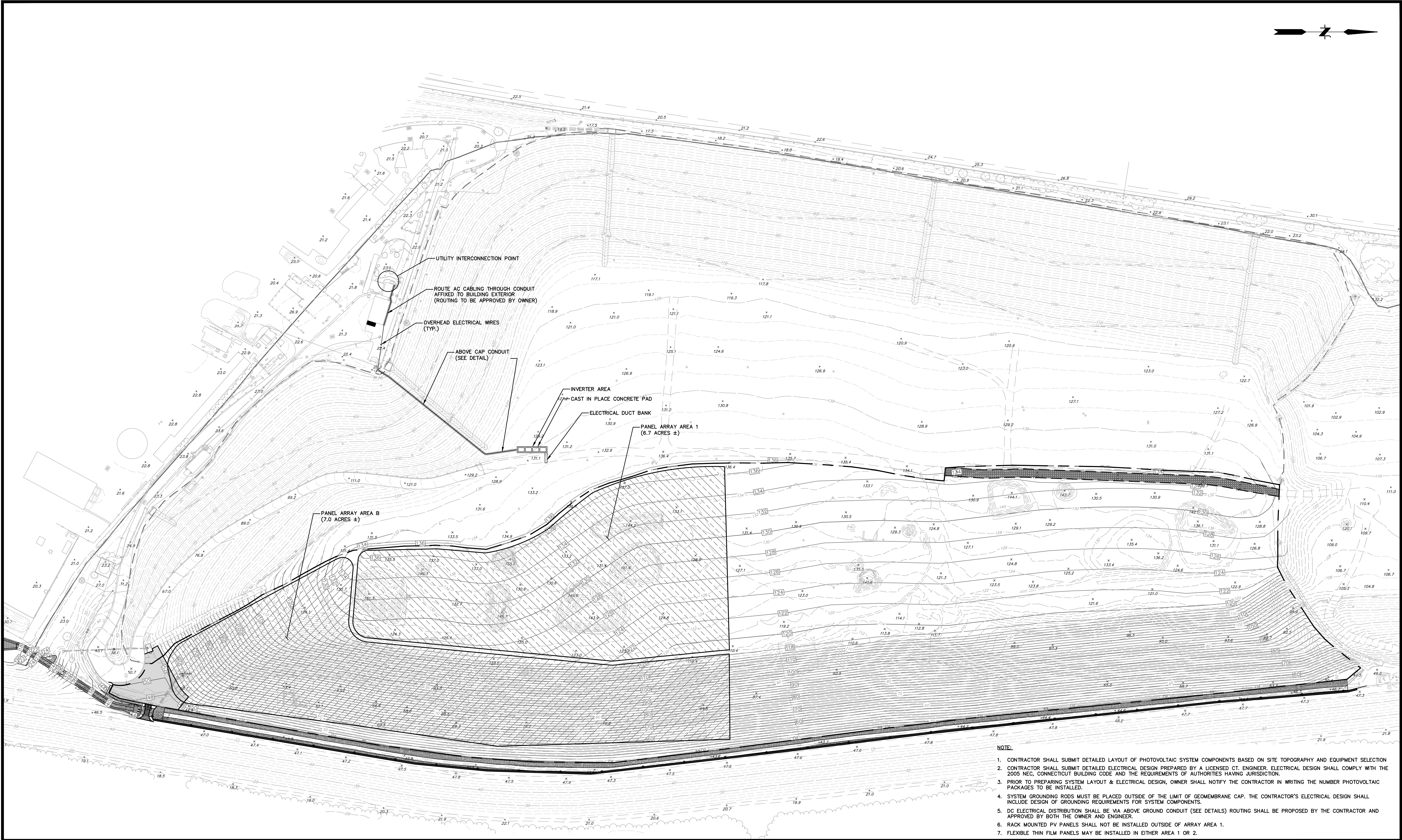
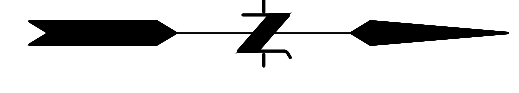
EROSION & SEDIMENT CONTROL PLAN

PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT

HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013

**C-1.54**

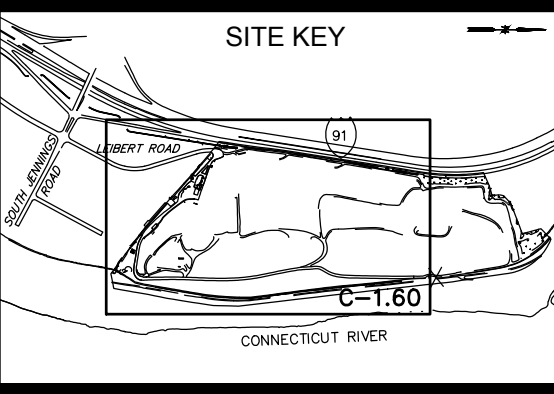


- NOTE:**
1. CONTRACTOR SHALL SUBMIT DETAILED LAYOUT OF PHOTOVOLTAIC SYSTEM COMPONENTS BASED ON SITE TOPOGRAPHY AND EQUIPMENT SELECTION
  2. CONTRACTOR SHALL SUBMIT DETAILED ELECTRICAL DESIGN PREPARED BY A LICENSED CT. ENGINEER. ELECTRICAL DESIGN SHALL COMPLY WITH THE 2005 NEC, CONNECTICUT BUILDING CODE AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
  3. PRIOR TO PREPARING SYSTEM LAYOUT & ELECTRICAL DESIGN, OWNER SHALL NOTIFY THE CONTRACTOR IN WRITING THE NUMBER PHOTOVOLTAIC PACKAGES TO BE INSTALLED.
  4. SYSTEM GROUNDING RODS MUST BE PLACED OUTSIDE OF THE LIMIT OF GEOMEMBRANE CAP. THE CONTRACTOR'S ELECTRICAL DESIGN SHALL INCLUDE DESIGN OF GROUNDING REQUIREMENTS FOR SYSTEM COMPONENTS.
  5. DC ELECTRICAL DISTRIBUTION SHALL BE VIA ABOVE GROUND CONDUIT (SEE DETAILS) ROUTING SHALL BE PROPOSED BY THE CONTRACTOR AND APPROVED BY BOTH THE OWNER AND ENGINEER.
  6. RACK MOUNTED PV PANELS SHALL NOT BE INSTALLED OUTSIDE OF ARRAY AREA 1.
  7. FLEXIBLE THIN FILM PANELS MAY BE INSTALLED IN EITHER AREA 1 OR 2.

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 MS VIEW: LAYER STATE:

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

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**SCALE:**  
 HORIZ.: 1" = 100'  
 VERT.:  
 HORIZ.: NAD 27  
 VERT.: NGVD 29  
**GRAPHIC SCALE**  
 100 50 0 50 100

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CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 PHOTOVOLTAIC SYSTEM LAYOUT PLAN  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
 HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013  
**C-1.60**



**System Properties :**

Solar Module Mfg.	Suntech
Solar Module Model	280 W
No. of Solar Modules	4312
No. of Modules per String	11
Mounting System Mfg.	Ballasted Ground Mount
Mounting System Type	Ground Mount
Solar Array Azimuth	0°
Solar Module Tilt Angle	30°
Total DC System Size	1207.36 kW
Inverter Mfg.	PV Powered
No. & Model of Inverters	(4) 250 kW

**PROJECT DEVELOPER**



Array	Sub Array	# of Modules	# of Strings	Total DC power (KW)	Inverter	Array Azimuth (°)	Tilt (°)	Color Mark
A	A1	1078	98	301.84	Inverter #1	0	30	Red
	A2	1078	98	301.84	Inverter #2			
	A3	1078	98	301.84	Inverter #3			
	A4	1078	98	301.84	Inverter #4			
TOTAL		4312	392	1207.36				

PROJECT NAME  
CRRA

SITE NAME AND ADDRESS  
199 Leibert Rd.,  
Hartford, CT-06120

DRAWING TITLE  
Array Layout

**B.** Option 1 for the direct buried cable route to the Interconnection Point.

**C.** Option 2 for the direct buried cable route to the Interconnection Point.

\* Interconnection Point.

**NOTE ADDED BY HELIOSAGE (3/8/13)**  
- OPTION 1A & 2A INCLUDES ARRAYS A1 & A2  
- OPTION 1B & 2B INCLUDES ARRAYS A1, A2, & A3  
- OPTION 1C & 2C INCLUDES ARRAYS A1, A2, A3, & A4

**WHERE DISCREPANCIES BETWEEN THIS SHEET AND SHEET C-1.60 EXIST, SHEET C-1.60 SHALL GOVERN.**

DESIGNER: #/##  
DRAFTER: Vijaytl DATE: 01/27  
CHECKER: #/## DATE: #/##

REV	DESCRIPTION	DRW	CHK	DATE
1.	Interconnection Point Revised	Vijaytl		02/03/12
2.	Cable Routing Added	Vijaytl		02/04/12
3.	Layout Revised	Vijaytl		02/07/12

PROJECT NUMBER  
PAGE SIZE

**B**

SITE NUMBER  
SCALE  
As Noted

DRAWING NUMBER

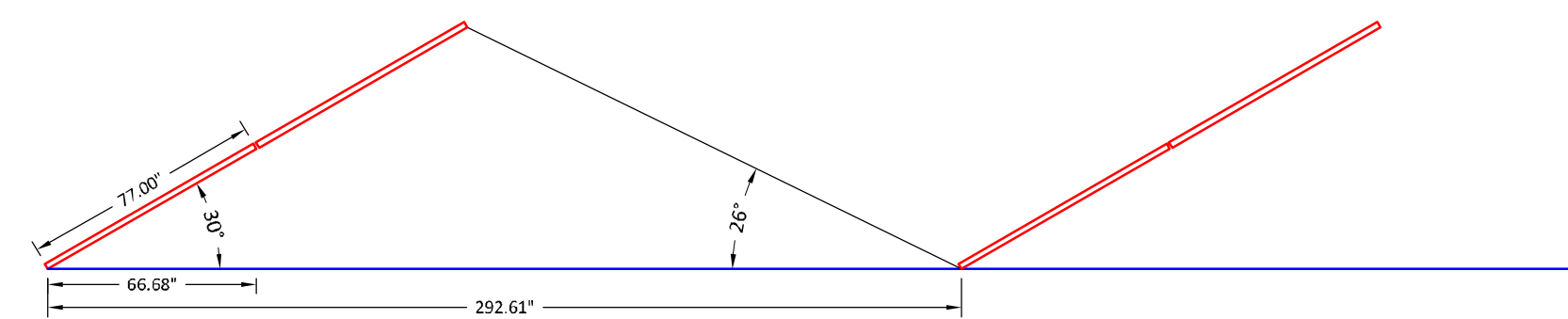
Dwg# ME-1 Sheet 1of2

Engineer

Mechanical & Electrical Engineers: GNACE

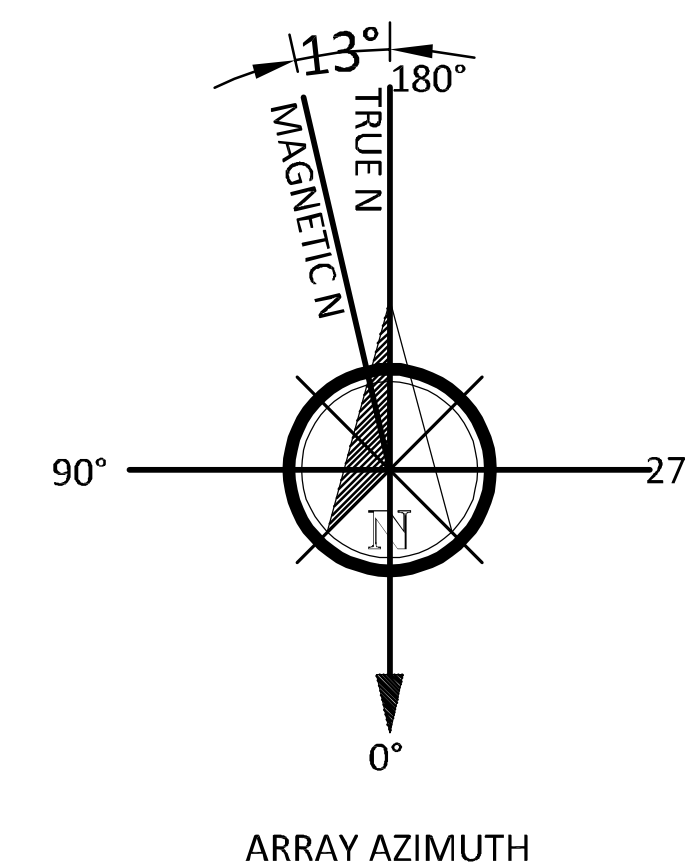
**1 PLAN VIEW: SOLAR ARRAY LAYOUT**

SCALE: NOT TO SCALE

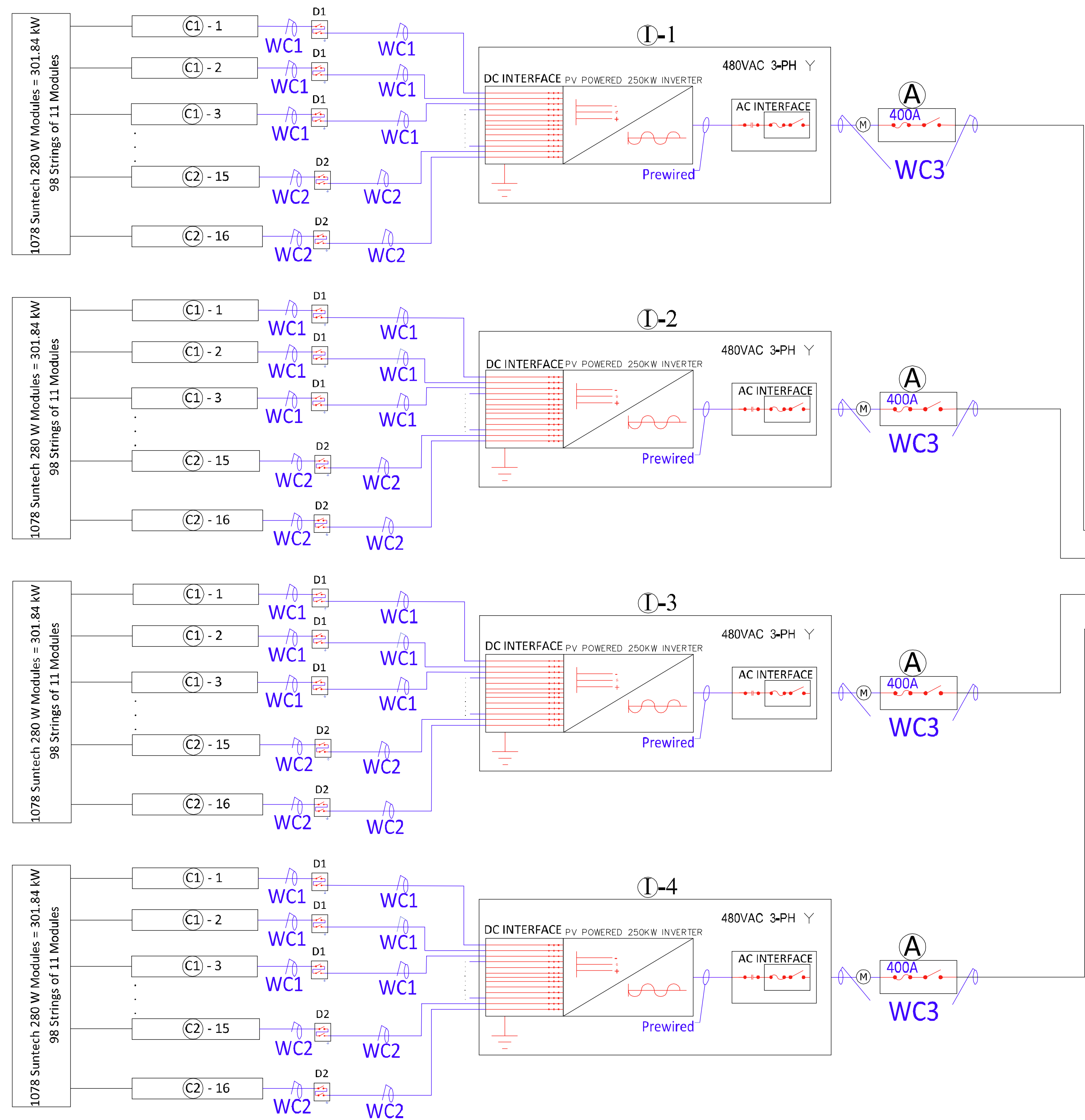


**2 SOLAR MODULE TILT & SPACING**

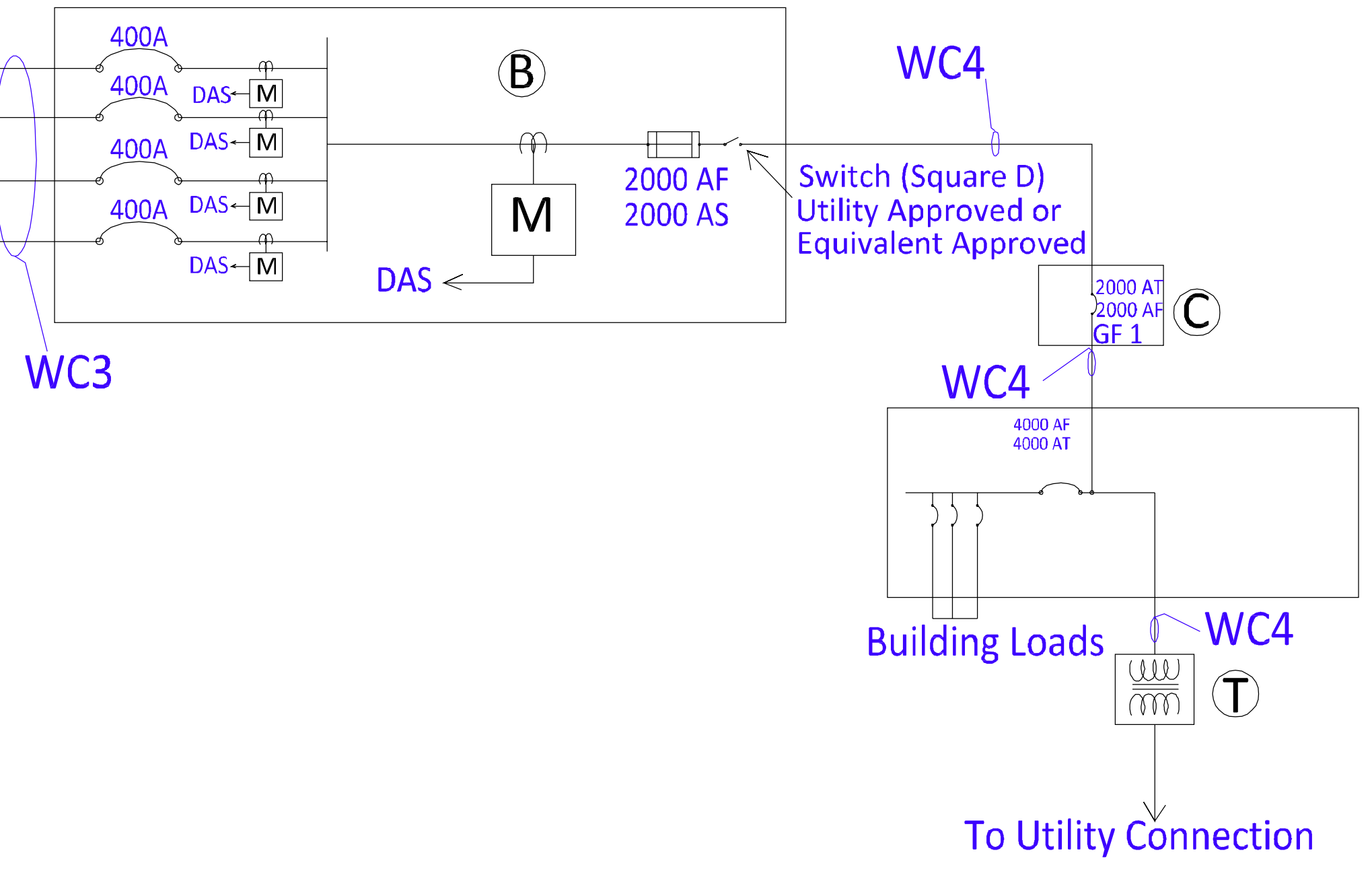
SCALE: NOT TO SCALE



**NOT FOR CONSTRUCTION  
FOR INTERCONNECTION  
APPLICATION APPROVAL  
ONLY**



Equipment Description Table	
Symbol	Reference
(C1)	6 String Combiner Box
(C2)	7 String Combiner Box
(I)	PV Powered 250 KW Inverter
(D1)	DC Disconnect with 80 A Fuse
(D2)	DC Disconnect with 100 A Fuse
(A)	400A AC Disconnect
(B)	2000 A , 480V 3P, 4W NEMA 3R Switchboard within the interconnection Building
(M)	REC Meter
(C)	Enclosed NEMA 3R Circuit Breaker
(T)	480V Step Up Transformer



NOT FOR CONSTRUCTION  
FOR INTERCONNECTION  
APPLICATION APPROVAL  
ONLY

**GENERAL NOTES:**

- ALL EQUIPMENT TO BE UL LISTED.
- ALL WORK, MATERIAL AND EQUIPMENT SHALL BE FURNISHED AND INSTALLED IN COMPLIANCE WITH NATIONAL ELECTRICAL CODE, NEC2008 (NFPA 70), STATE AND LOCAL ELECTRICAL CODE, AND 2008 EDITION OF LIFE SAFETY CODE (NFPA 101).
- NO PART OF THIS DRAWING OR SPECIFICATIONS IS INTENDED TO ALLOW A VIOLATION OF PHYSICAL WORKING SPACE REQUIREMENTS AROUND ELECTRICAL EQUIPMENT.
- ALL CONDUCTORS SHALL BE COPPER AND HAVE INSULATION RATING 600 V, 90 DEGREE C, UNLESS OTHERWISE NOTED.
- WIRING SHALL BE INSTALLED IN APPROVED METAL OR PVC CONDUITS OR RACEWAYS WITH LISTED FITTINGS, AS APPLICABLE, ADEQUATELY STRAP AND SUPPORT ALL CONDUIT WORK PER NEC2008, IN GENERAL SUPPORT ALL CONDUIT WITHIN THREE FEET (3') OF OUTLET BOX, CABINET OR PANEL AND MAXIMUM OF TEN FEET (10') ON CENTER THEREAFTER, EMT CONDUIT IS TO BE LISTED FOR WET LOCATION, IF USED.
- ALL DISCONNECTS SHALL BE LABELED 'WARNING - ELECTRIC SHOCK HAZARD - DO NOT TOUCH TERMINALS' AND 'TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION' PER NEC 690.17.
- EXPOSED NON-CURRENT CARRYING METAL PARTS OF MODULE FRAMES, EQUIPMENT AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.134 AND 250.136(A). PHOTOVOLTAIC MODULES TO BE GROUNDED USING FACTORY GROUND POINT ONLY.
- ALLOWABLE AMPACITIES OF ABOVEGROUND CONDUCTORS SHALL BE DERATED BY A CORRECTION FACTOR OF 0.82.
- ALL CONDUCTORS ROUTED ALONG THE BUILDING ROOFTOP SHALL BE DERATED BY A CORRECTION FACTOR OF 0.67 (ESTIMATE AMBIENT TEMPERATURE OF 51°-55°C, REFER TO TABLE 310.16).
- GROUND CONTINUITY SHALL BE MAINTAINED ACROSS CONDUIT/ENCLOSURE INTERFACE USING APPROVED JUMPER METHOD.

Wire Sizing Table						
	6 String Combiner to DC Disconnect	7 String Combiner to DC Disconnect	DC Disconnect to Inverter for 6 Strings	DC Disconnect to Inverter for 7 Strings	Inverter to AC Disconnect	AC Side Wiring from Switchboard Output upto Transformer
<b>Wire Size</b>	(2) #1 AWG THWNN 2 + (1) #8G THWNN 2 (WC1)	(2) #1/0 AWG THWNN 2 + (1) #8G THWNN 2 (WC2)	(2) #1 AWG THWNN 2 + (1) #8G THWNN 2 (WC1)	(2) #1 AWG THWNN 2 + (1) #8G THWNN 2 (WC2)	(2 conductors per phase) #3/0 AWG THWNN 2 + (2) #3G THWNN 2 (WC3)	(5 conductors per phase) 600 kcmil THWNN 2 (WC4)
<b>Conduit Size</b>	(1) 0.75"	(1) 1.0"	(1) 0.75"	(1) 1.0"	(2) - 2" EMT conduits	

**DRAWING NOTES:**

- GROUNDED WILL BE ACCOMPLISHED USING DESIGNATED GROUNDING LOCATION ON THE PHOTOVOLTAIC MODULE AND THE RACKING SYSTEM GROUNDING METHODS. SEE RACKING SYSTEM INSTALLATION INSTRUCTIONS.
- STRING COMBINER BOXES SHALL BE FUSED WITH 600 VDC FAST ACTING FUSES ONLY.
- DISPLAY CIRCUIT RATING INFORMATION ON LABEL PERMANENTLY MARKED AT THE DC DISCONNECT SWITCH.
- THE INVERTER WILL AUTOMATICALLY DE-ENERGIZE THE OUTPUTS IF THE UTILITY GRID IS REMOVED.
- UPON DETECTION OF GROUND FAULT CURRENT, THE INVERTER EXECUTES AN ORDERLY SHUTDOWN, AND ANNUNCIATES A GROUND FAULT AT THE OPERATOR INTERFACE.
- STRING HOMERUNS SHALL USE UL LISTED WEATHERPROOF, UV SUNLIGHT RESISTANT, FINGERSAFE, PLUG-AND-RECEPTACLE CONNECTORS, MULTICONTACT TYPE OR EQUIVALENT, EXISTING PV MODULE CONNECTORS SHALL BE UTILIZED, HOMERUNS TO MATCH.
- CONTRACTOR SHALL INSTALL INVERTER POWER LINE ON THE SUPPLY SIDE OF BUILDING MAIN POWER DISCONNECT AS PER SECTION 230.82(6).
- DC COMBINER BOX SHALL UTILIZE NEGATIVE GROUNDING. POSITIVE WIRES ARE FUSED.
- DC COMBINER BOX SHALL UTILIZE POSITIVE GROUNDING. NEGATIVE WIRES ARE FUSED.
- UTILITY SHALL REPLACE EXISTING METER WITH A BI-DIRECTIONAL METER.
- UNFUSED POSITIVE WIRES FROM COMBINER BOXES
- UNFUSED NEGATIVE WIRES FROM COMBINER BOXES
- RECOMBINER BOX DOES NOT HAVE ANY NEUTRAL UNFUSED WIRES CONNECTED. ONLY CONNECT POWER AND GROUND WIRES.
- (6) WIRE (#16 AWG) PV TIE OUTPUT FOR INVERTER
- INVERTER DC DISCONNECTS SHALL BE UNFUSED.
- CONTRACTOR SHALL INSTALL A 4 WIRE TERMINATION LUG ON UTILITY SIDE OF AC DISCONNECT

**PROJECT DEVELOPER**



PROJECT NAME  
**CRRA**

SITE NAME AND ADDRESS  
**180 Leibert Rd.,  
Hartford, CT-06120**

DRAWING TITLE  
**DC Side Single Line Diagram**

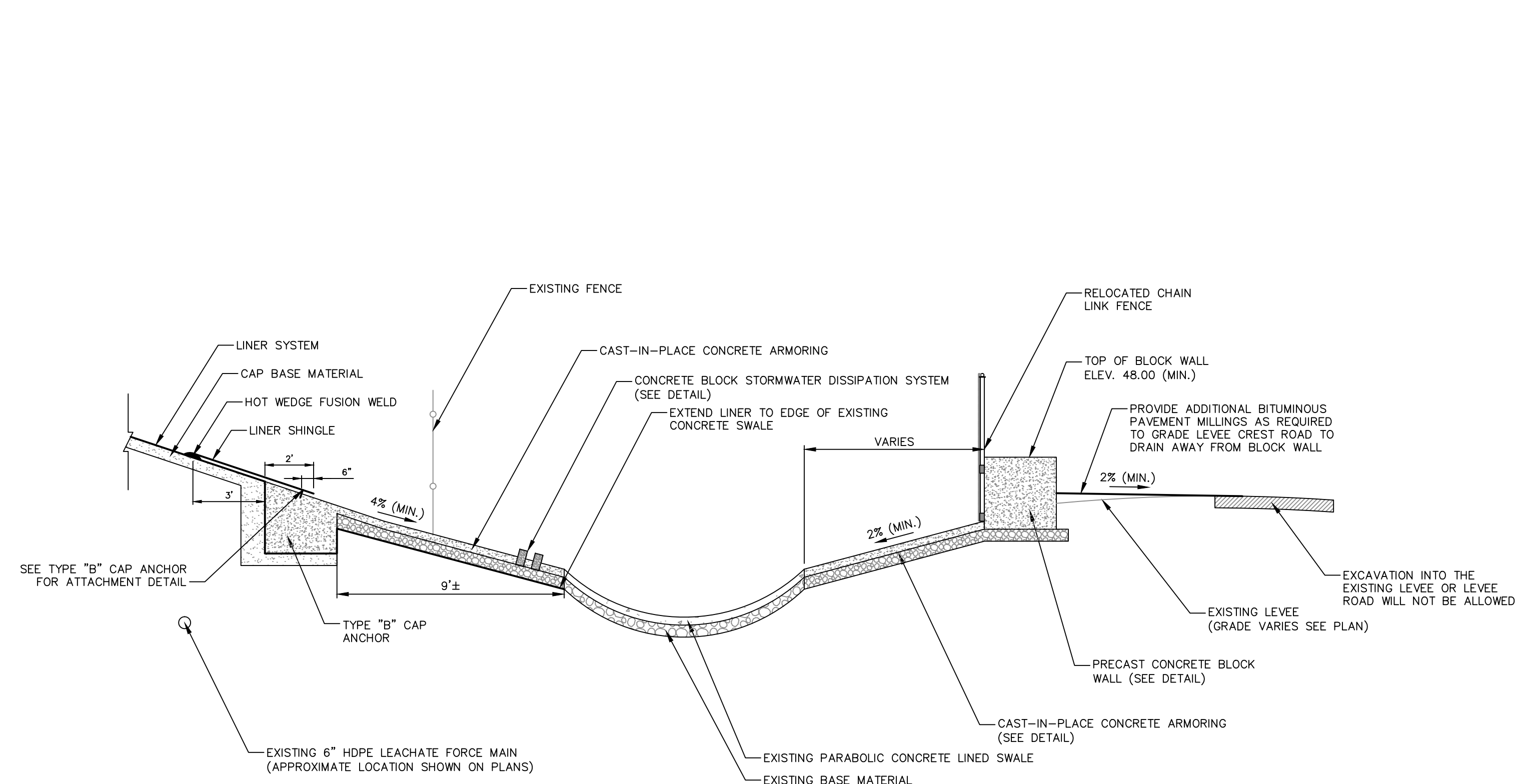
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DRAFTER: VJjayt	DATE: 01/27
CHECKER:	DATE: #/##

REVISION HISTORY			
REV	DESCRIPTION	DRW/CHK	DATE
1.	AC Side Added	VJjayt	02/03/12
2.	AC Side Revised	VJjayt	02/04/12

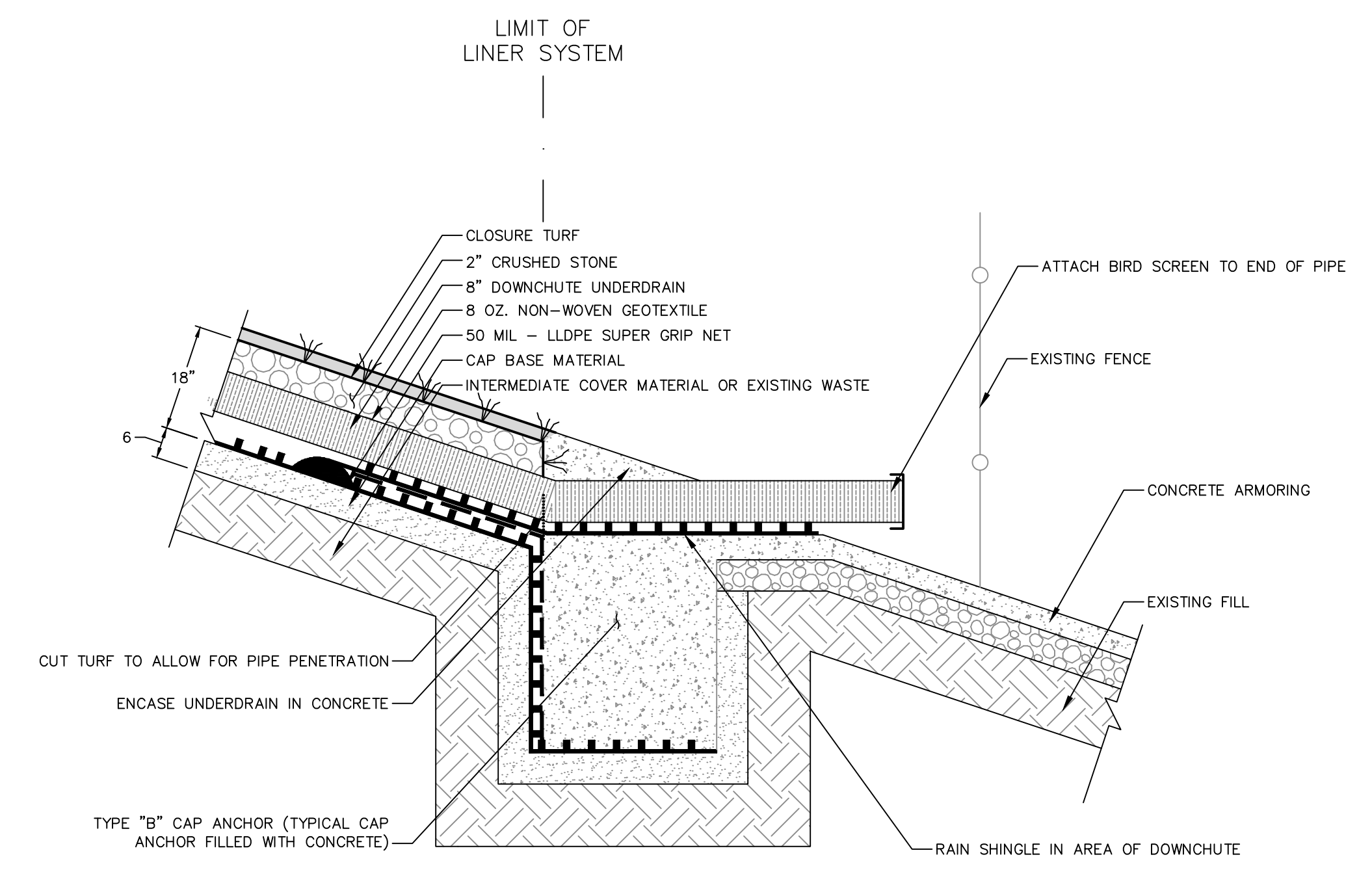
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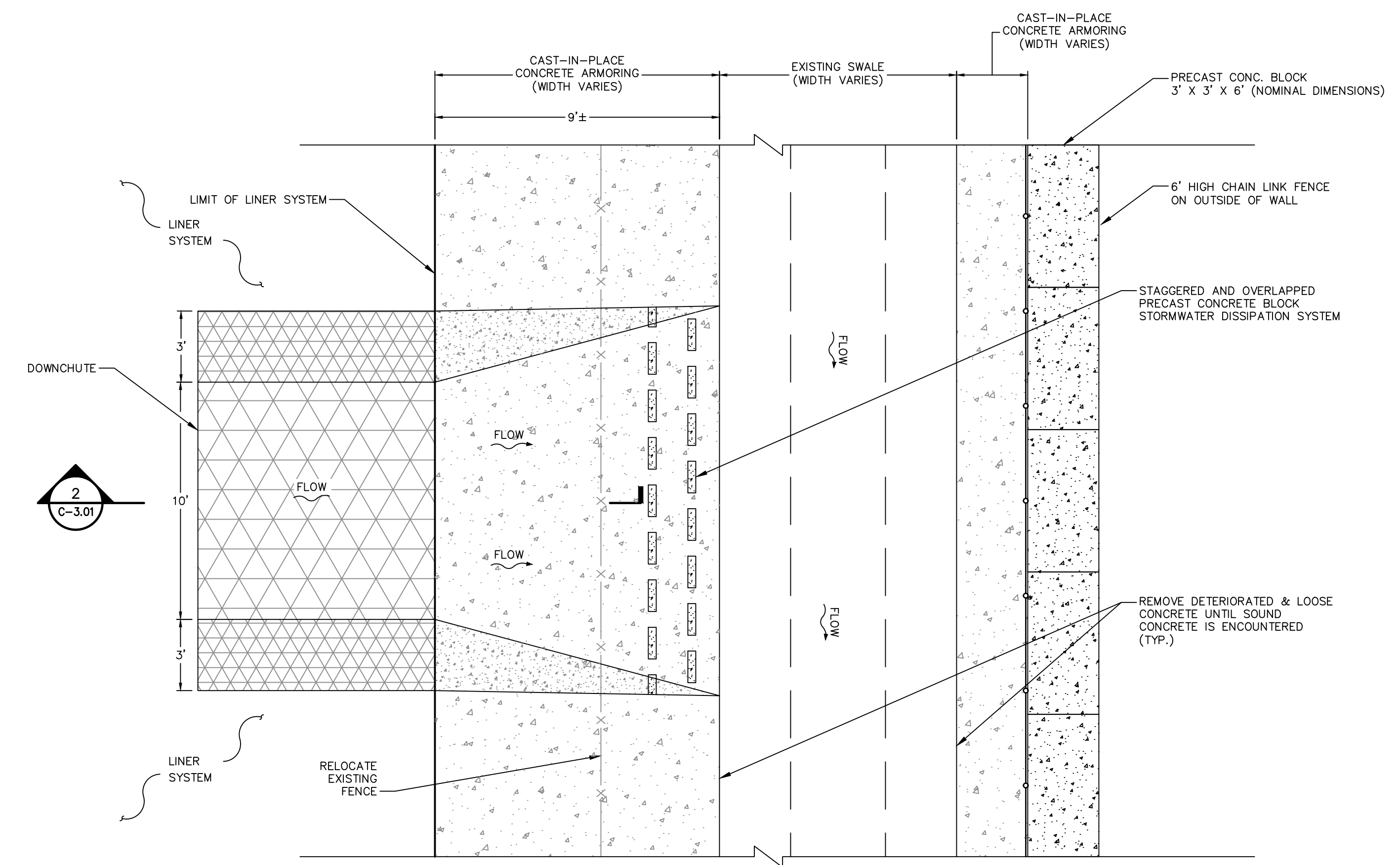
Engineer  
Mechanical & Electrical Engineers: GNACE



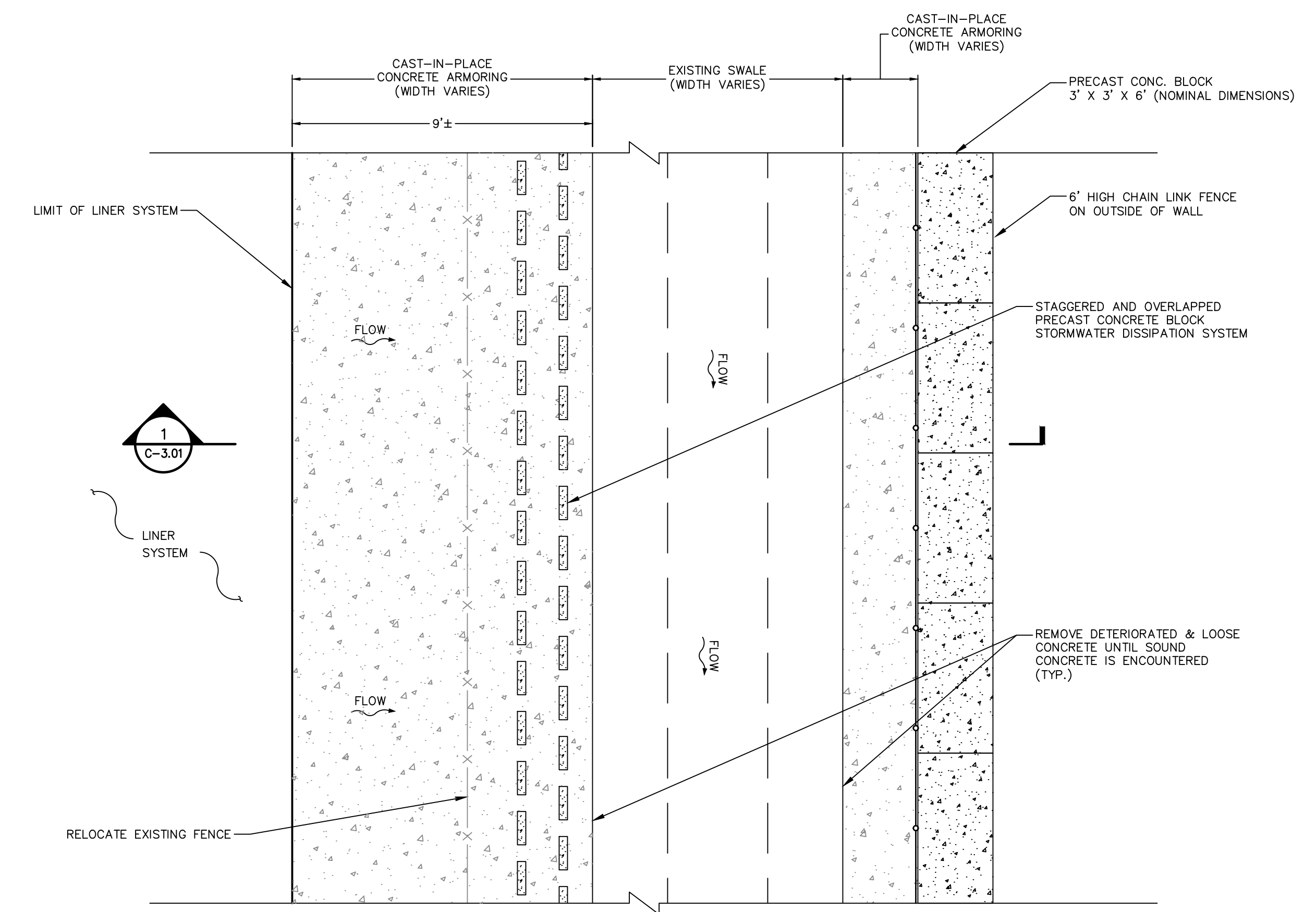
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NOT TO SCALE



2 DOWNCHUTE UNDERDRAIN DETAIL - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE



3 ENERGY DISSIPATION SYSTEM & ANCHOR - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE



4 ENERGY DISSIPATION SYSTEM & ANCHOR - EXPOSED TPO ALTERNATIVE  
NOT TO SCALE

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TYPICAL TOE OF SLOPE SECTIONS & DETAILS

PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT

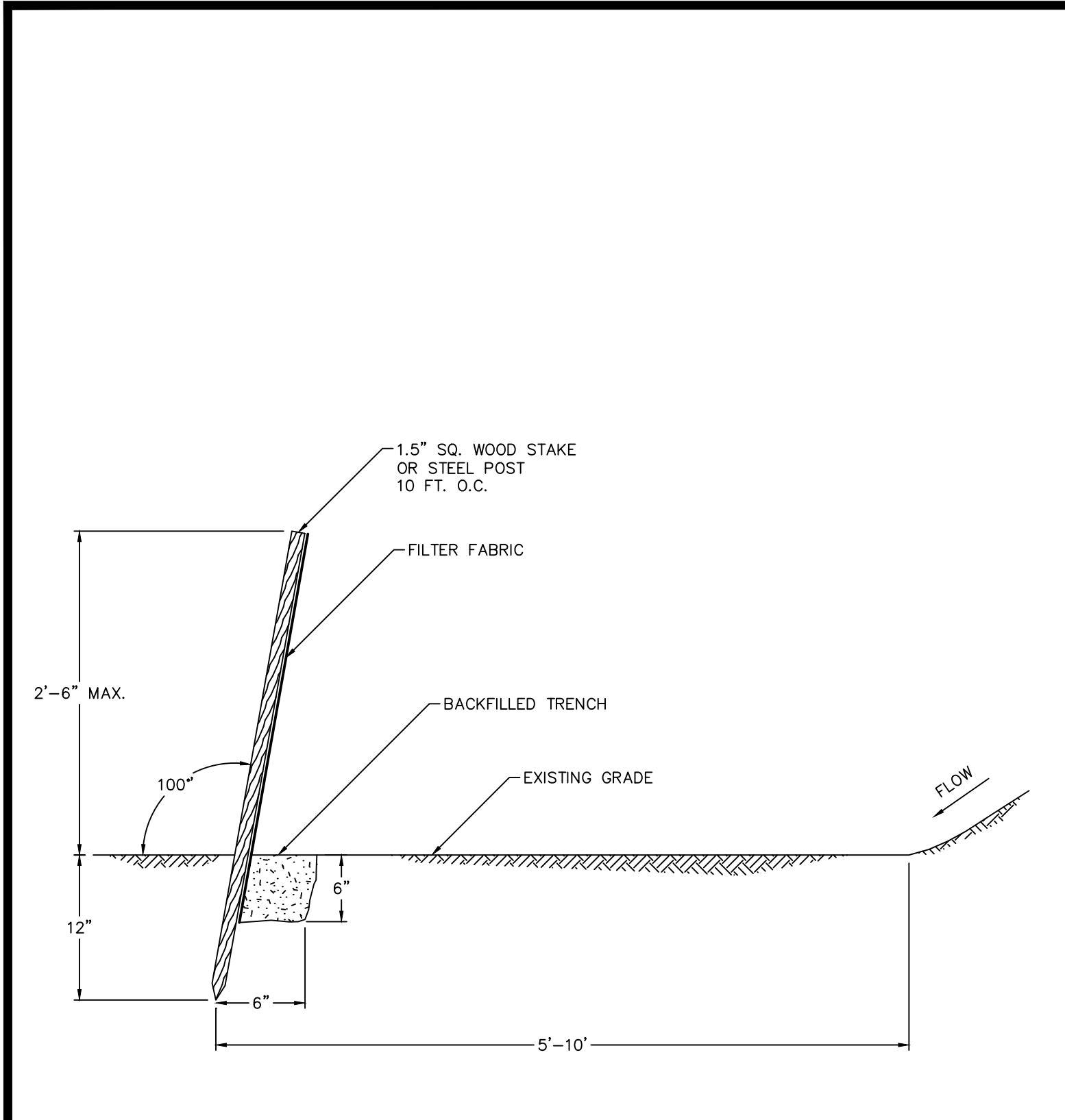
HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
DATE: 03/05/2013

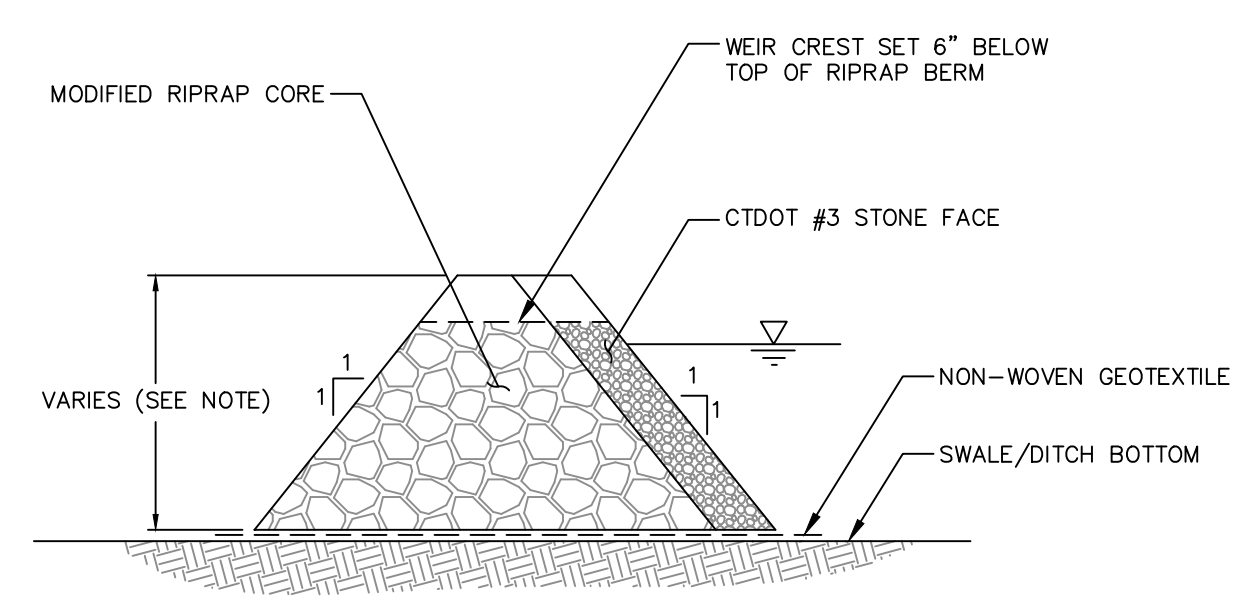
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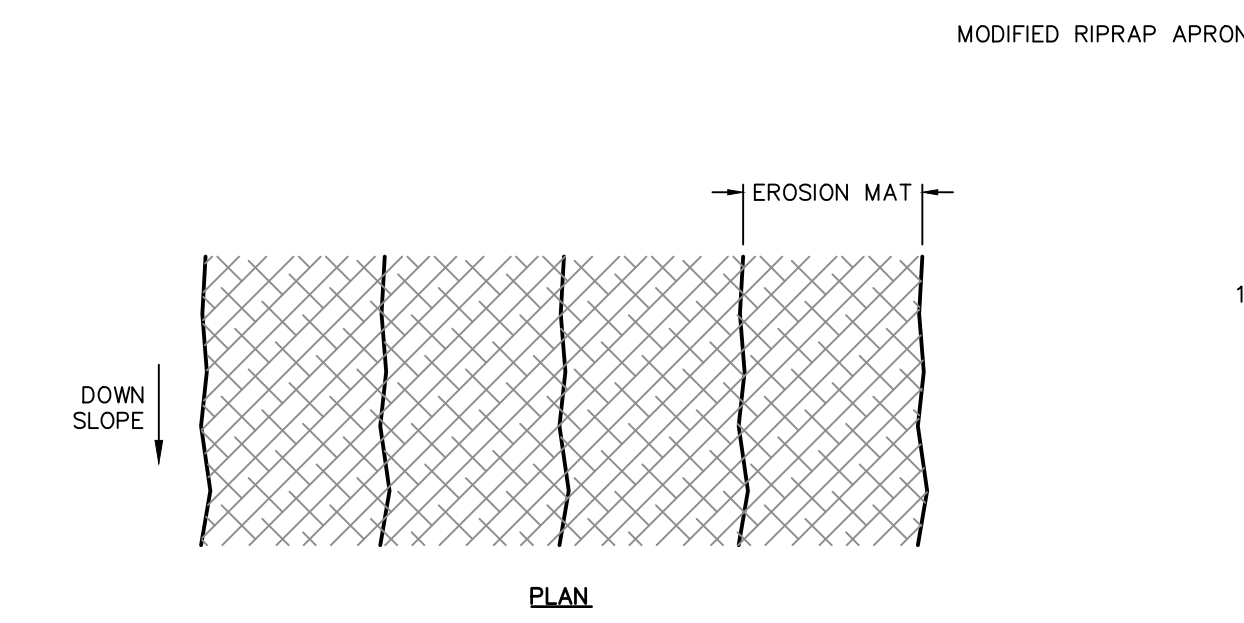


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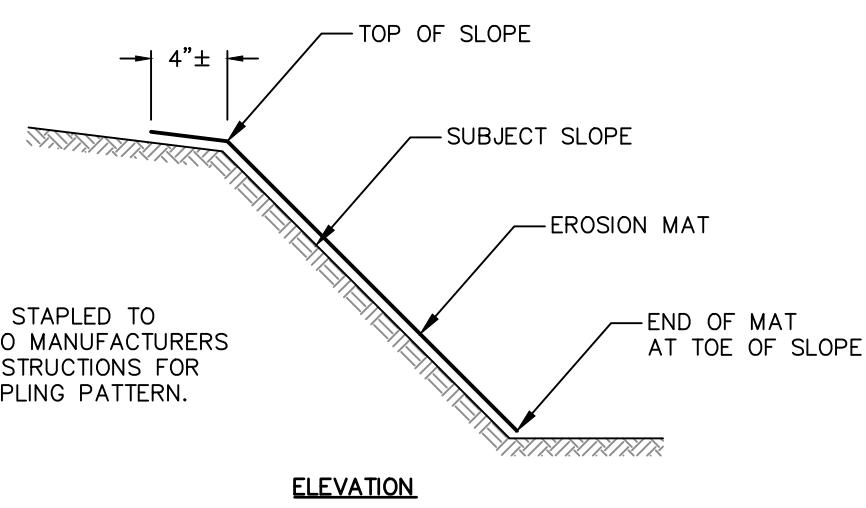


**NOTE:**  
1. HEIGHT OF RIPRAP BERM SHALL MATCH EXISTING GRADES OUTSIDE OF THE DRAINAGE DITCHES, BUT SHALL NOT EXCEED 3'.  
2. SPACING OF TEMPORARY SEDIMENT TRAPS IN DRAINAGE WAYS SHALL BE 200' O.C. OR AS REQUIRED BY THE 2002 CONNECTICUT E&SC GUIDELINES (WHICHEVER IS LESS).

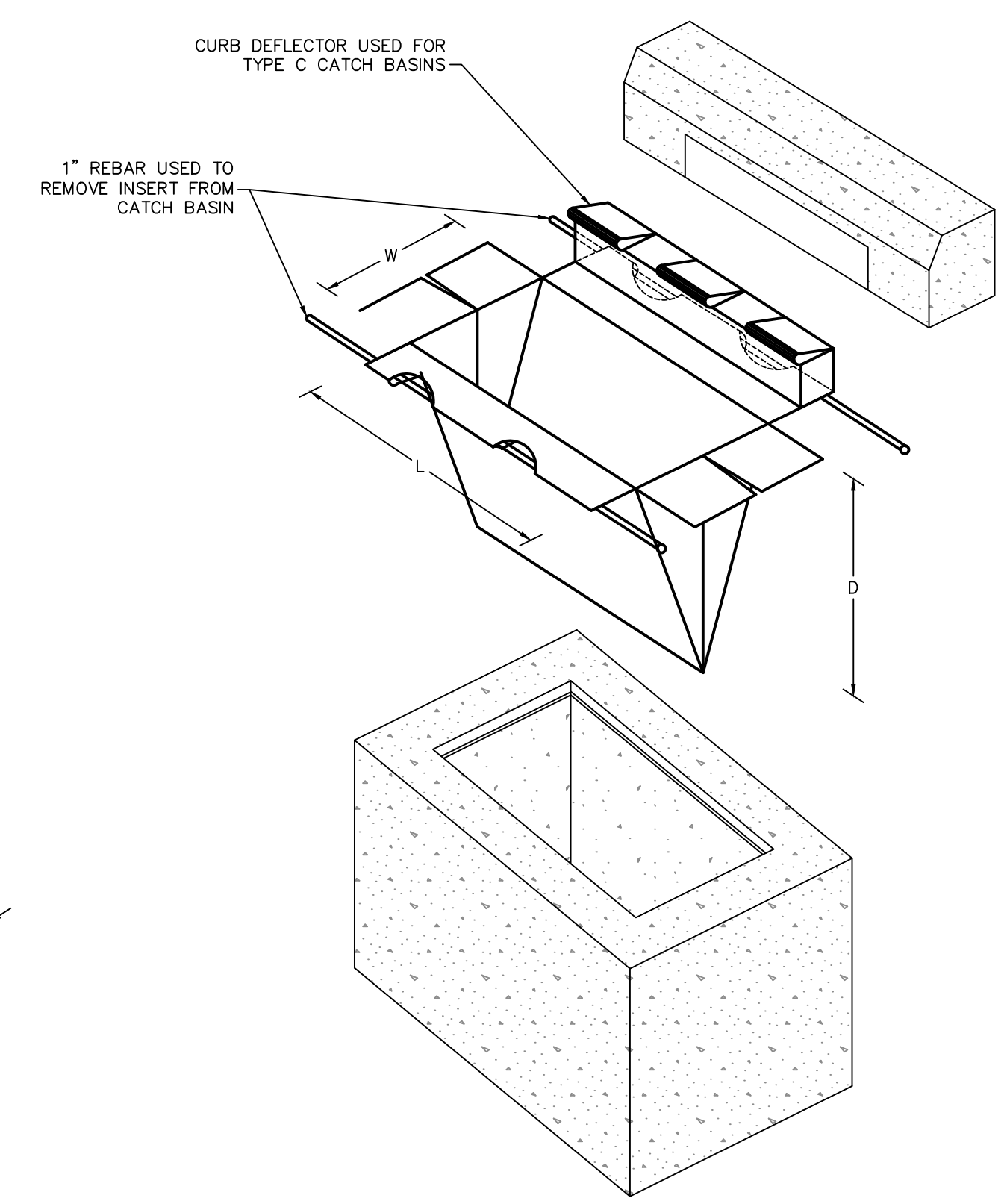
**2 TEMPORARY SEDIMENTATION TRAP**  
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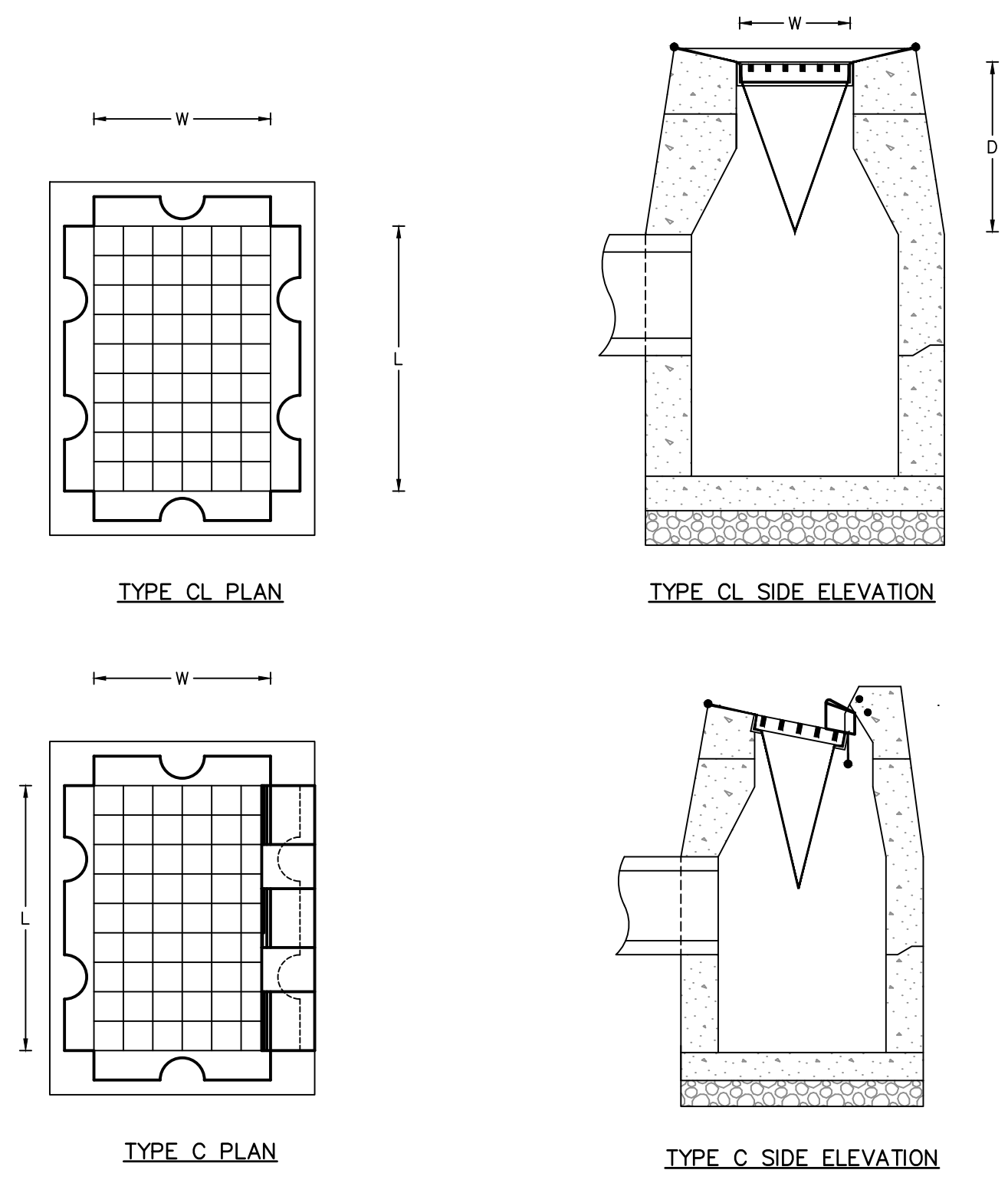
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NOT TO SCALE



**4 TEMPORARY PIPE SLOPE DRAIN**  
NOT TO SCALE



**5 CONSTRUCTION ENTRANCE**  
NOT TO SCALE



**6 TEMPORARY SILT FENCE DIVERSION**  
NOT TO SCALE

**7 CATCH BASIN INSERT**  
NOT TO SCALE

- EROSION & SEDIMENT CONTROL NOTES**
- CONSTRUCTION STANDARDS** - CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MOST RECENT EDITION OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" (CT DEP BULLETIN 34). ALL MEASURES SHALL BE MAINTAINED AND UPGRADED TO ACHIEVE PROPER SEDIMENT CONTROL DURING CONSTRUCTION.
  - PLAN IMPLEMENTATION** - IMPLEMENT THIS EROSION AND SEDIMENT CONTROL PLAN. THIS IMPLEMENTATION INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES UNTIL PERMANENT STABILIZATION IS ACHIEVED, INFORMING ALL SUBCONTRACTORS OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFYING THE PROPER MUNICIPAL AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY. THE OWNER SHALL BE RESPONSIBLE FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN TO THE NEW OWNER IF THE TITLE OF THE LAND IS TRANSFERRED PRIOR TO ACHIEVING PERMANENT STABILIZATION.
  - INSTALLATION SCHEDULE** - INSTALL THE CONSTRUCTION ENTRANCE BEFORE CONSTRUCTION TRAFFIC INTO AND OUT OF THE PROJECT AREA BEGINS. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO STUMP REMOVAL AND CONSTRUCTION. INSTALL ADDITIONAL CONTROL MEASURES DURING THE CONSTRUCTION PERIOD, IF DEEMED NECESSARY BY THE OWNER, HIS AGENTS OR AGENTS OF THE MUNICIPALITY.
  - FUGITIVE DUST** - CONTROL FUGITIVE DUST USING WATER SPRAYS OR CALCIUM CHLORIDE ON SOIL SURFACES, SWEEPING PAVED AREAS, TEMPORARY WINDBREAKS OR NON-ASPHALTIC SOIL TACKIFIERS.
  - HAY BALE LIFE SPAN** - INSTALL HAY BALES WHERE PROTECTION AND EFFECTIVENESS IS REQUIRED FOR LESS THAN 90 DAYS. OTHERWISE, INSTALL SILT FENCE.
  - CATCH BASINS** - PROTECT CATCH BASINS WITH PROPER CONTROLS THROUGHOUT THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
  - STOCKPILES** - ENCIRCLE STOCKPILES OF ERODIBLE SOIL WITH A HAY BALE OR SILT FENCE BARRIER. THE SIDE SLOPES OF ERODIBLE STOCKPILED MATERIAL SHALL BE NO STEEPER THAN 2:1. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS SHALL BE SEEDING AND MULCHED IMMEDIATELY AFTER THEY ARE FORMED.
  - TOE OF SLOPE** - ESTABLISH AN EROSION CONTROL BARRIER (SILT FENCE OR HAY BALE BARRIER) APPROXIMATELY 5 TO 10 FEET FROM THE PROPOSED TOE OF THE CUT OR FILL AREA PRIOR TO BEGINNING EARTHWORK.
  - SEDIMENT REMOVAL** - SEDIMENT REACHING 1/2 THE HEIGHT OF THE EROSION CONTROL BARRIER SHALL BE REMOVED. REMOVE AND DISPOSE OF SEDIMENT IN A MANNER CONSISTENT WITH THE INTENT OF THE PLAN.
  - SOIL STABILIZATION SCHEDULE** - APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE. APPLY TEMPORARY SOIL STABILIZATION MEASURES IF FINAL GRADING IS TO BE DELAYED MORE THAN 30 DAYS.
  - TEMPORARY SEEDING** - TEMPORARILY SEED ERODIBLE SOILS THAT WILL BE EXPOSED GREATER THAN 1 BUT LESS THAN 12 MONTHS WITHIN THE FIRST 7 DAYS OF SUSPENDING GRADING OPERATIONS. APPLY LIME AT A RATE OF 90 LBS/1000 SQ. FT. APPLY 10-10-10 FERTILIZER AT A RATE OF 7 1/2 LBS/1000 SQ. FT. APPLY PERENNIAL RYE GRASS AT A RATE OF 2 LBS/1000 SQ. FT. TO A DEPTH OF 1/2 INCH. OPTIMUM SEEDING DATES ARE MARCH 15 TO JULY 1 AND AUGUST 1 TO OCTOBER 15. MULCH FOR SEED APPLIED WITHIN THE OPTIMUM SEEDING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 80%-95% SOIL COVERAGE. MULCH FOR SEED APPLIED OUTSIDE OF THE OPTIMUM SEEDING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 95%-100% COVERAGE.
  - PERMANENT SEEDING** - SEED PERMANENT LAWN AREAS IN ACCORDANCE WITH THE SPECIFICATIONS.
  - INSPECTION** - THE OWNER SHALL SECURE THE SERVICES OF A SOIL SCIENTIST OR PROFESSIONAL ENGINEER TO VERIFY IN THE FIELD THAT THE CONTROLS REQUIRED BY THIS PLAN ARE PROPERLY INSTALLED AND MAINTAINED. THESE INSPECTIONS SHALL BE NOT LESS FREQUENTLY THAN WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM HAVING A RAINFALL AMOUNT OF 0.1 INCH OR GREATER. FOLLOWING THESE INSPECTIONS, A WRITTEN REPORT SHALL BE PREPARED, INFORMING THE OWNER OR HIS AGENT NOT LESS FREQUENTLY THAN WEEKLY AND THE MUNICIPALITY NOT LESS FREQUENTLY THAN MONTHLY OF OBSERVATIONS, MAINTENANCE, AND CORRECTIVE ACTIVITIES UNDERTAKEN.

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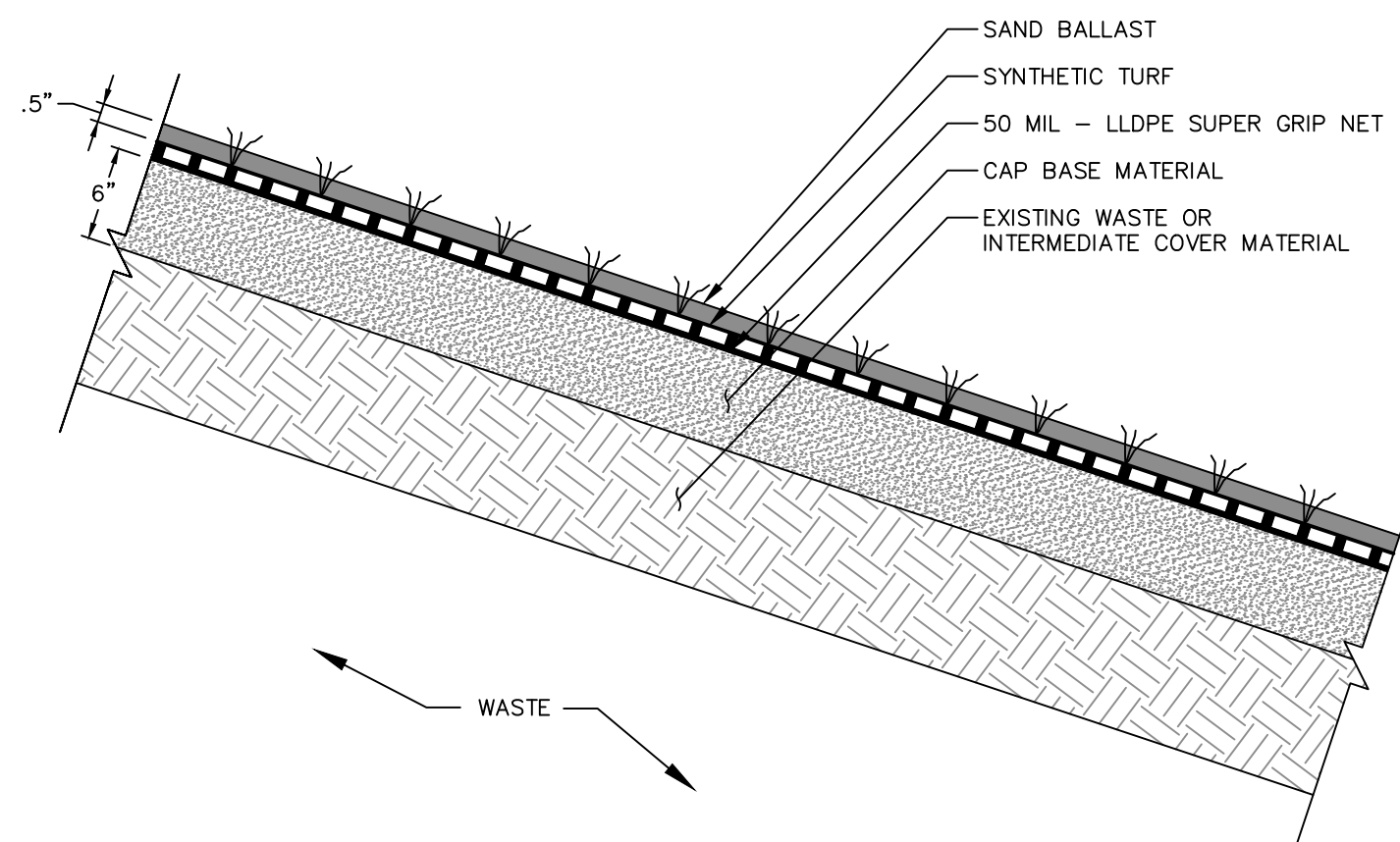
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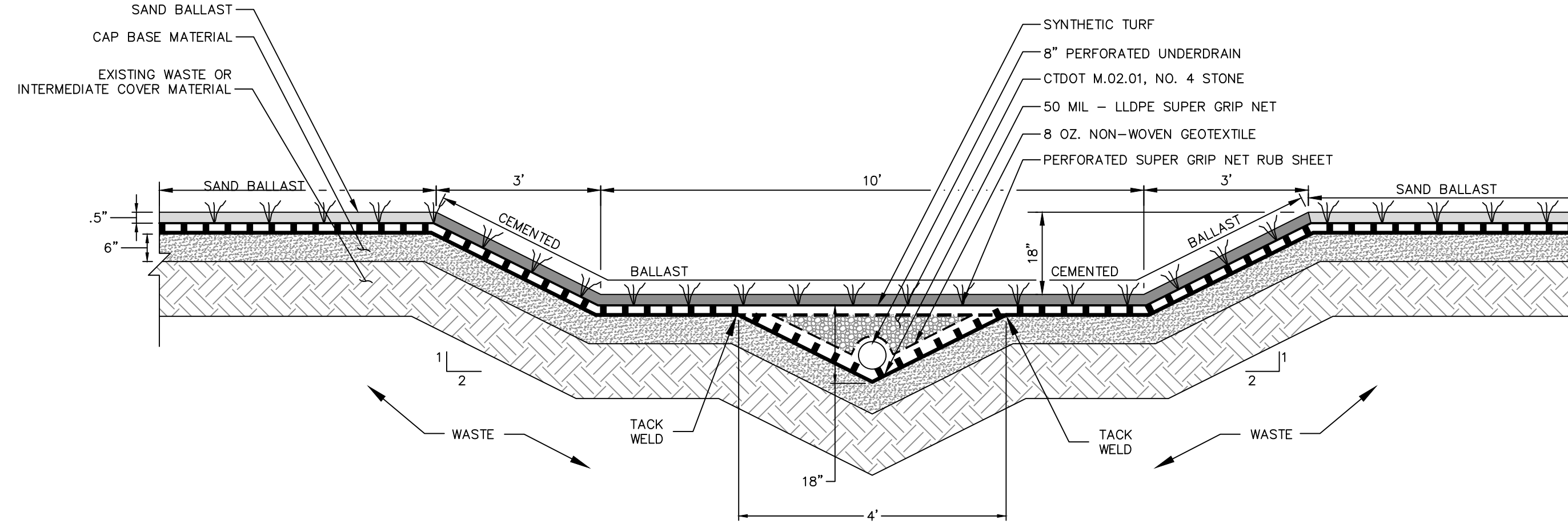
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EROSION & SEDIMENT CONTROL DETAILS  
PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
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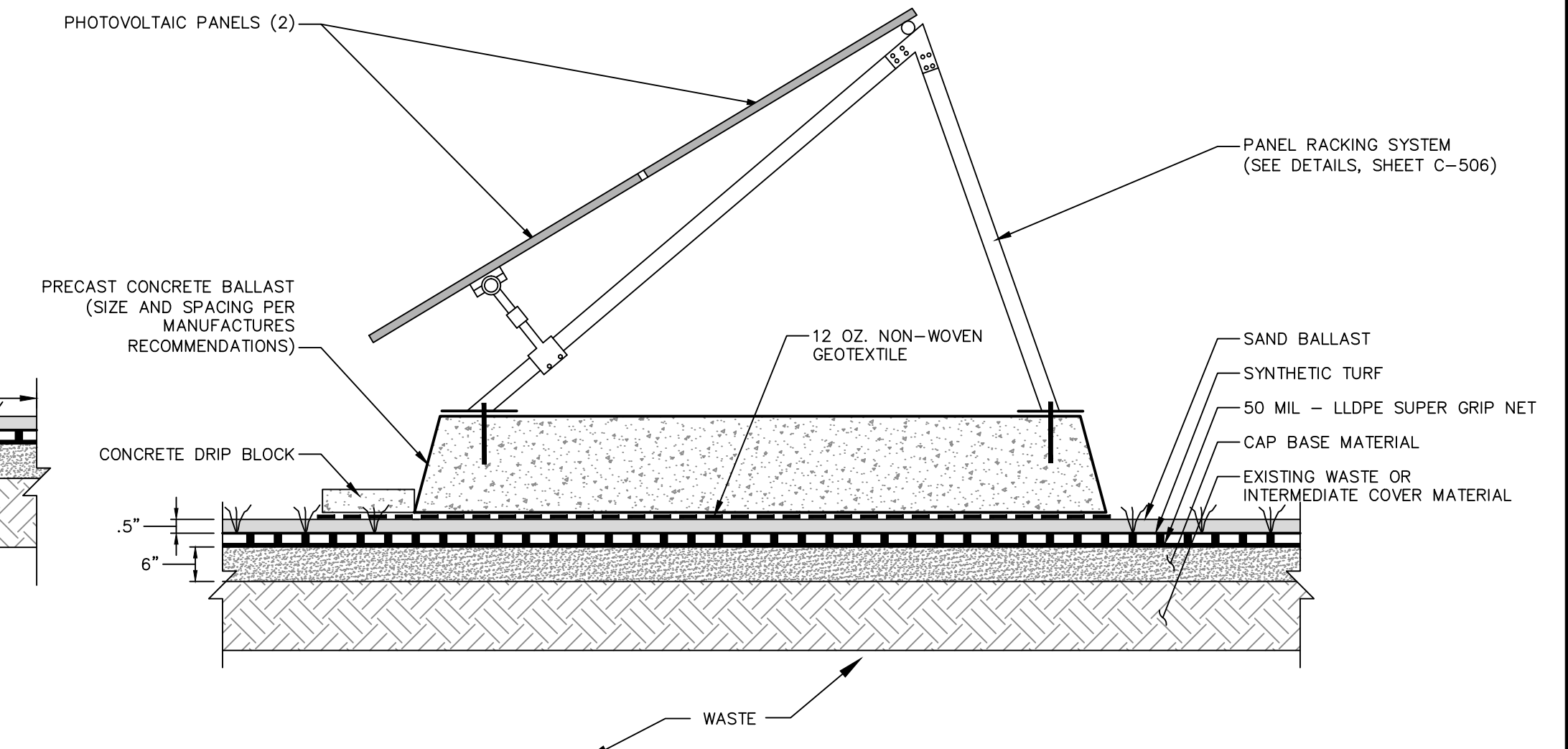
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**C-5.01**



1 TYPICAL CAP SECTION - CLOSURE TURF™ ALTERNATIVE  
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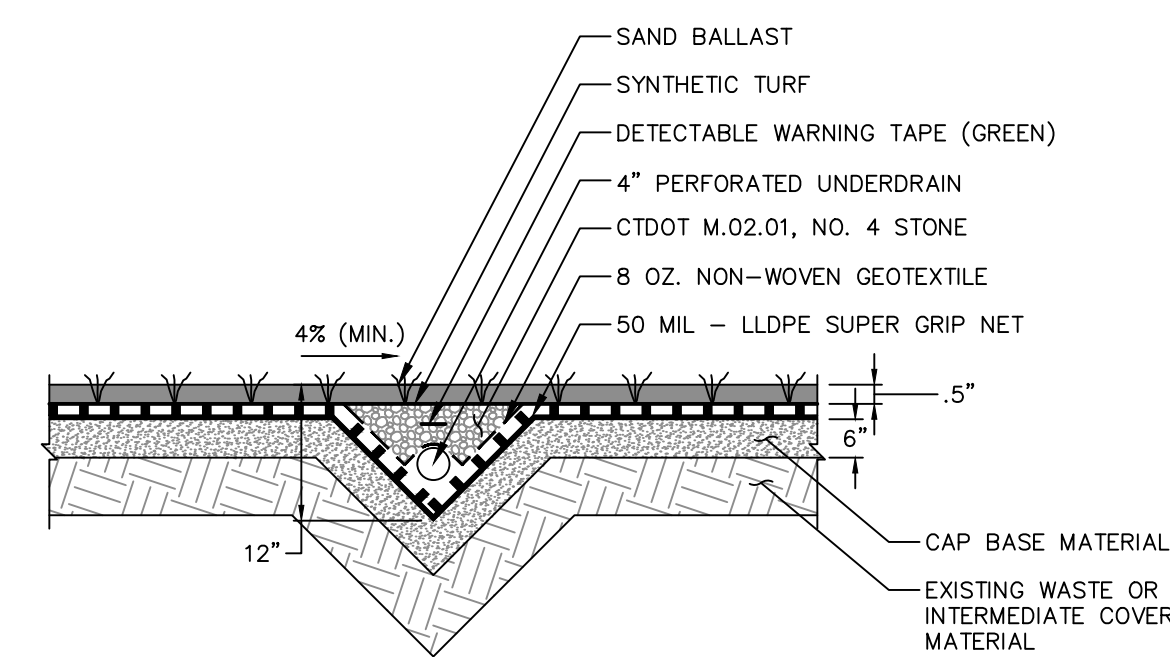


2 TYPICAL DOWNCHUTE - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE

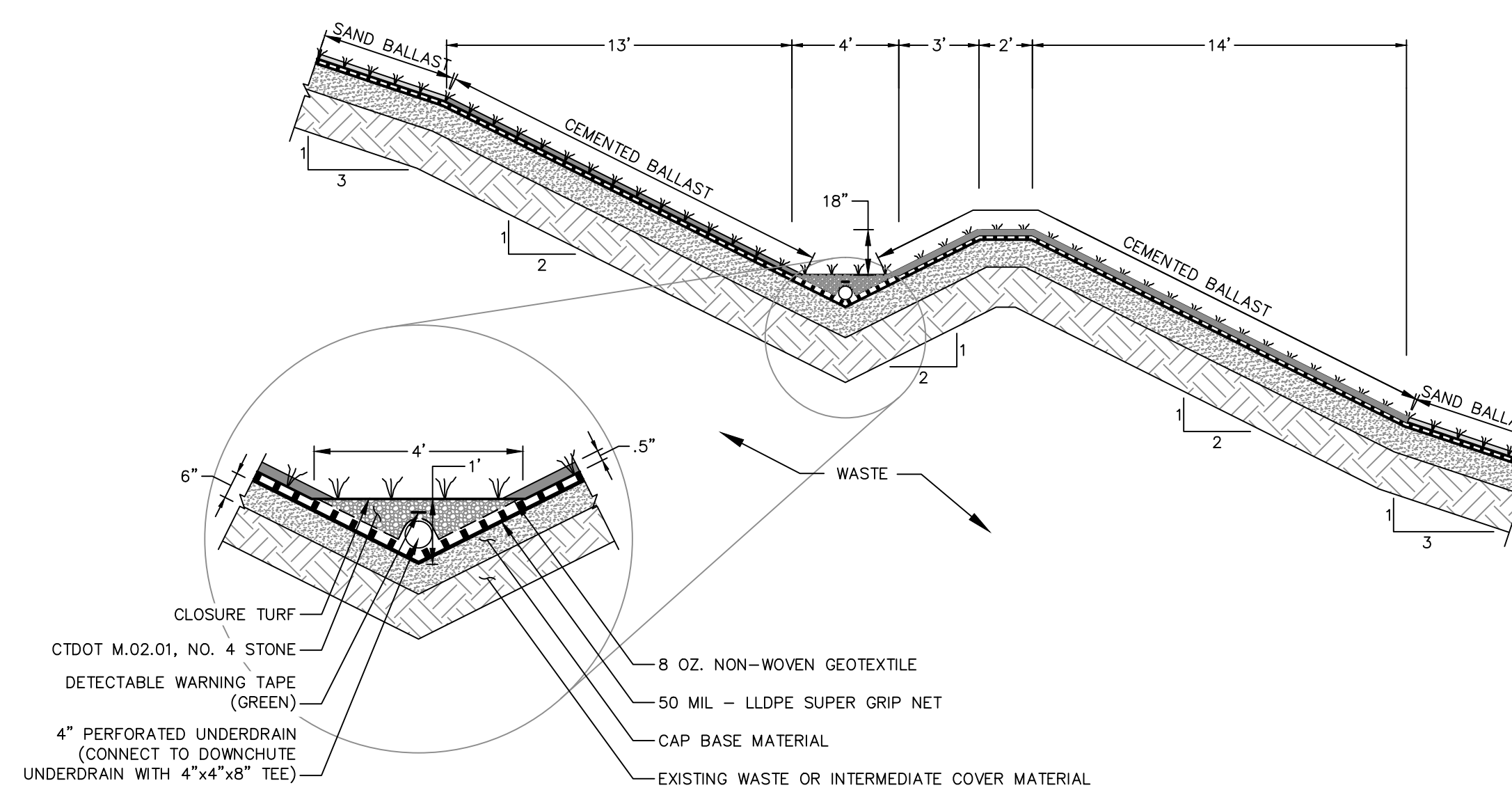


NOTE: FOUNDATION SYSTEM, PV RACKING SYSTEM, AND PV SYSTEM SHALL BE DESIGNED BY CONTRACTOR AND SHALL NOT EXCEED A MAXIMUM BEARING PRESSURE OF 200 PSF (1.4 PSI)

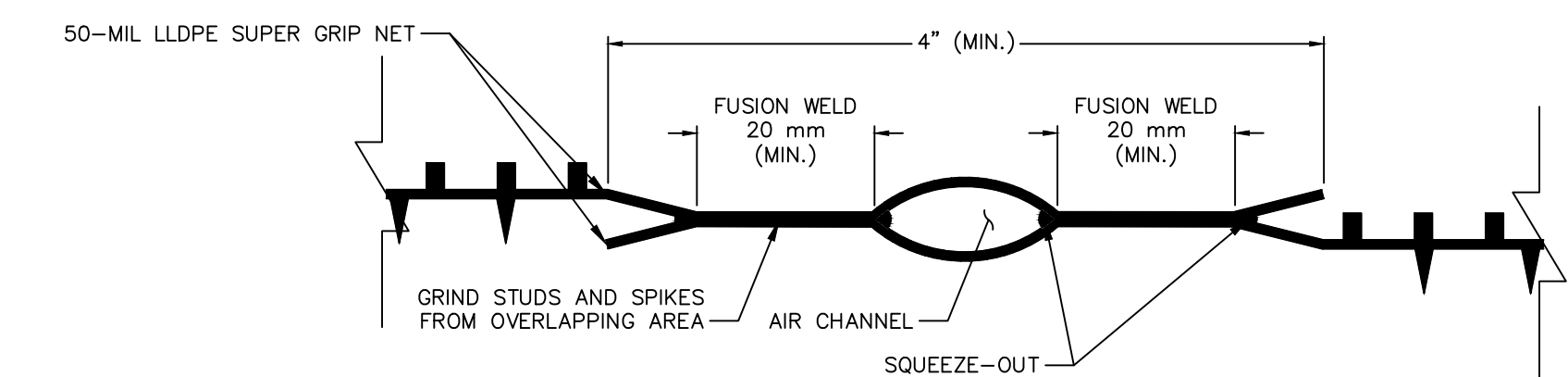
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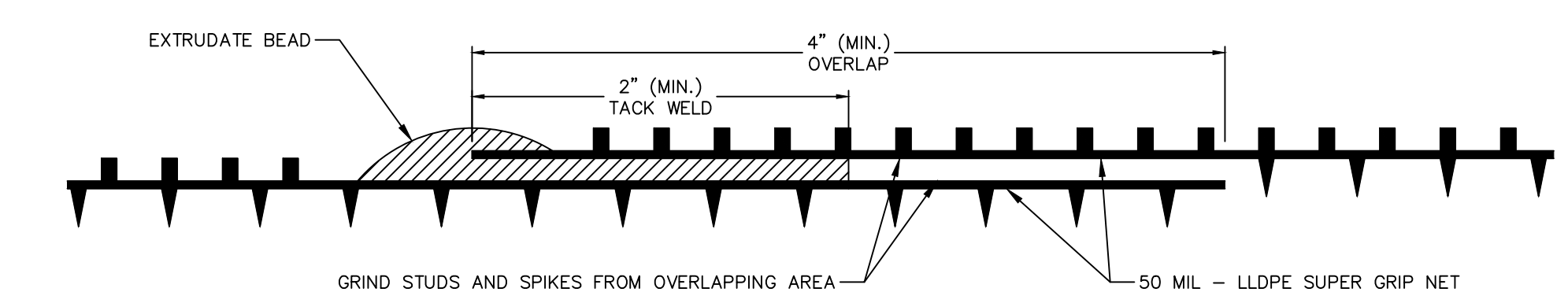
4 UNDERDRAIN TRENCH - CLOSURE TURF™ ALTERNATIVE  
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5 TYPICAL SLOPE DIVERSION TRENCH - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE



6 TYPICAL HOT WEDGE FUSION WELD - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE



7 TYPICAL EXTRUSION WELD - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE

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CONNECTICUT RESOURCES RECOVERY AUTHORITY

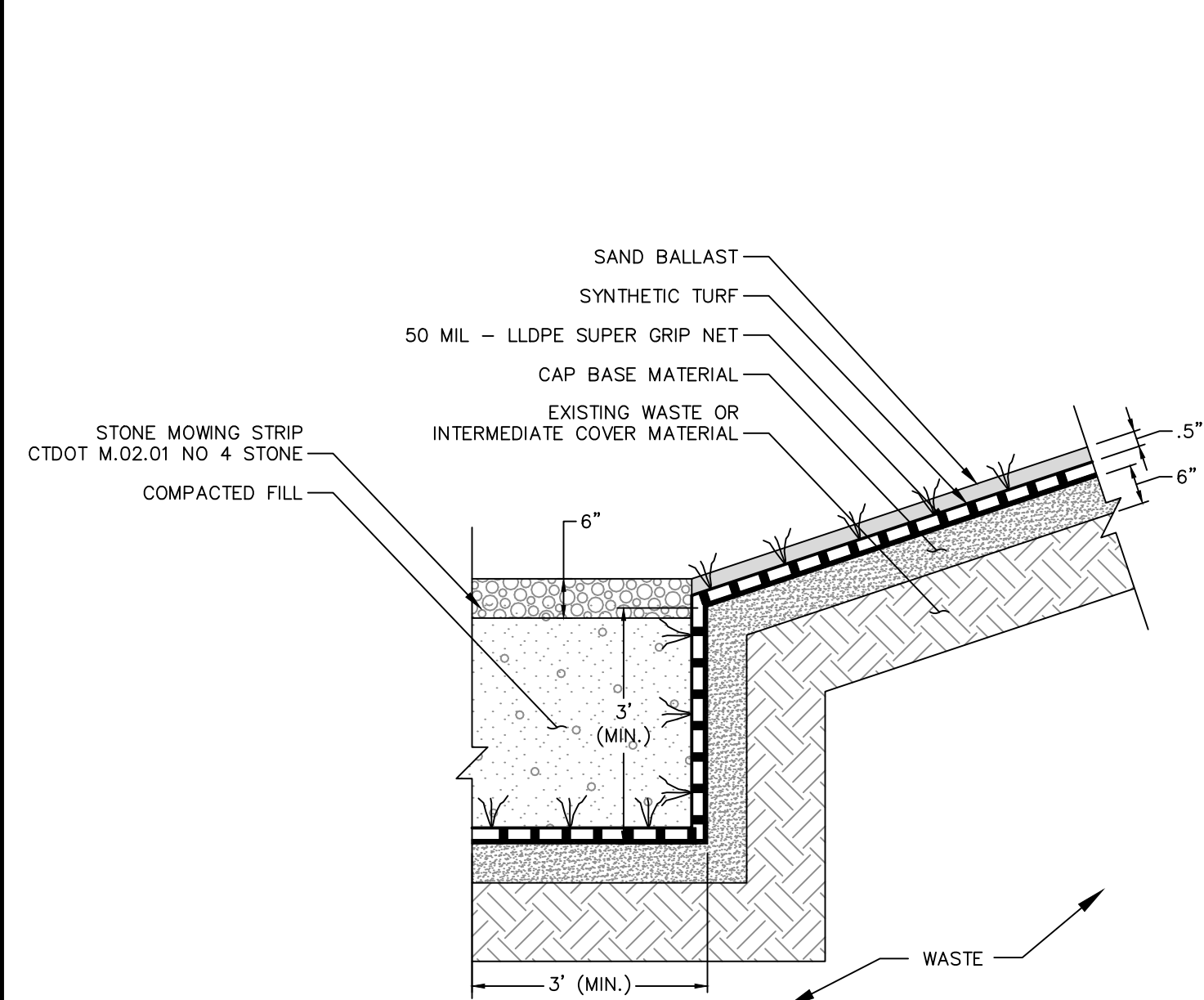
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PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT

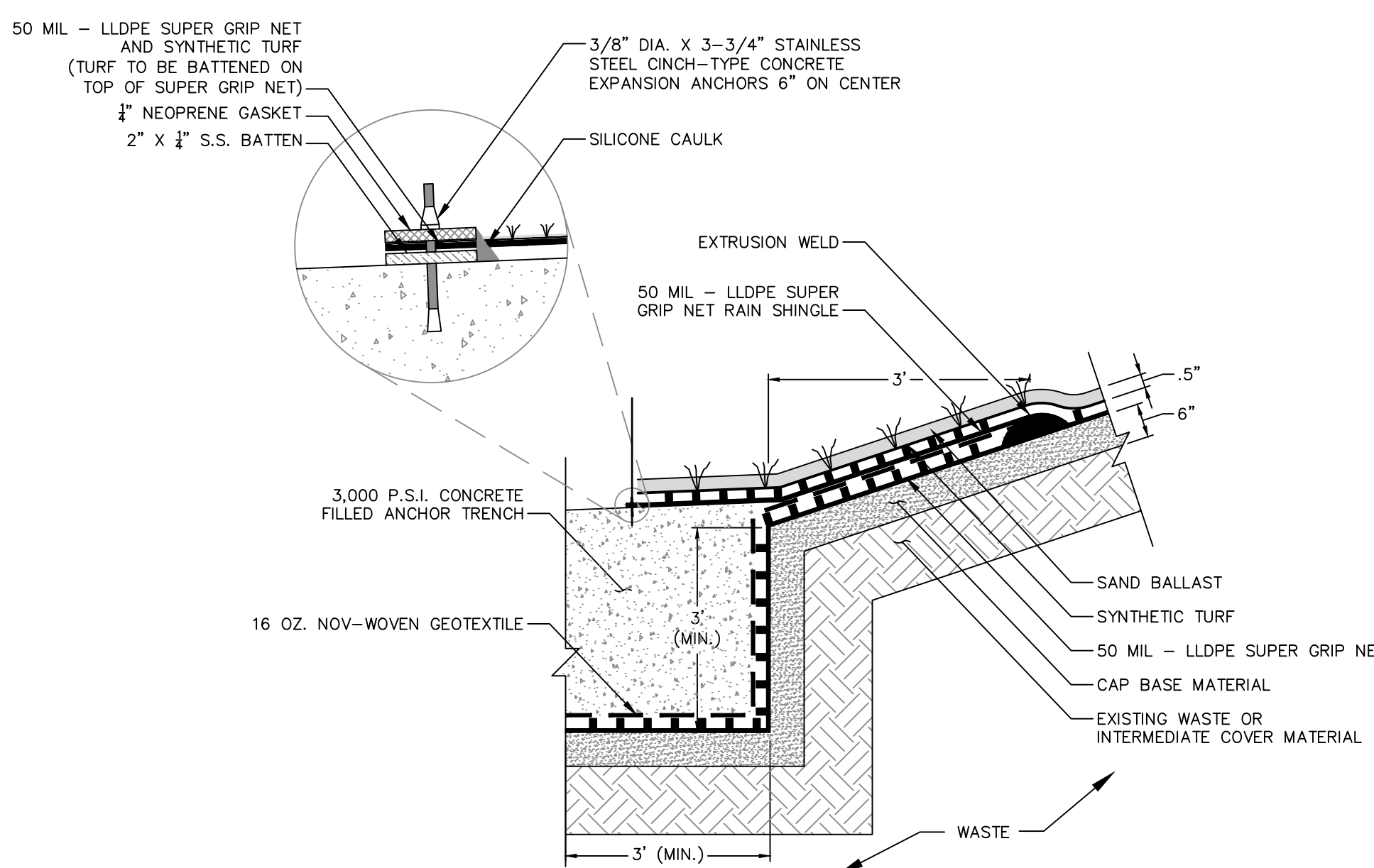
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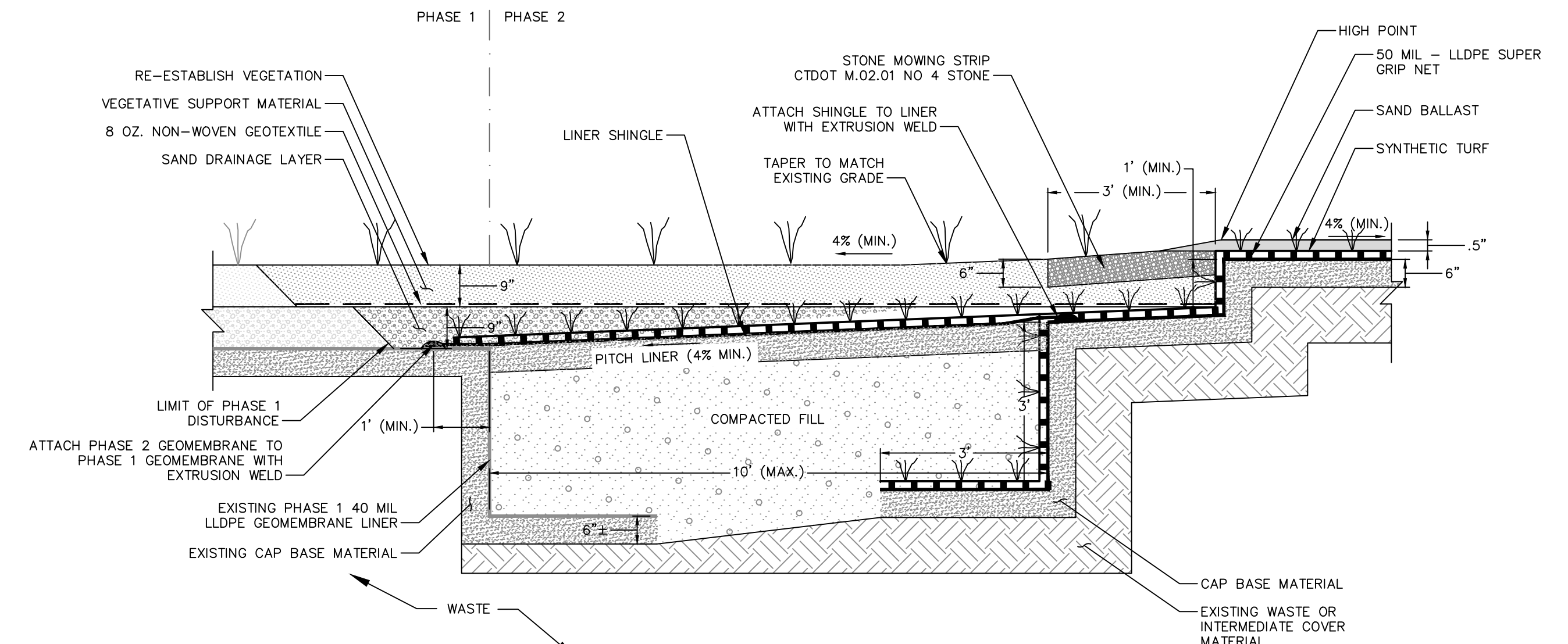
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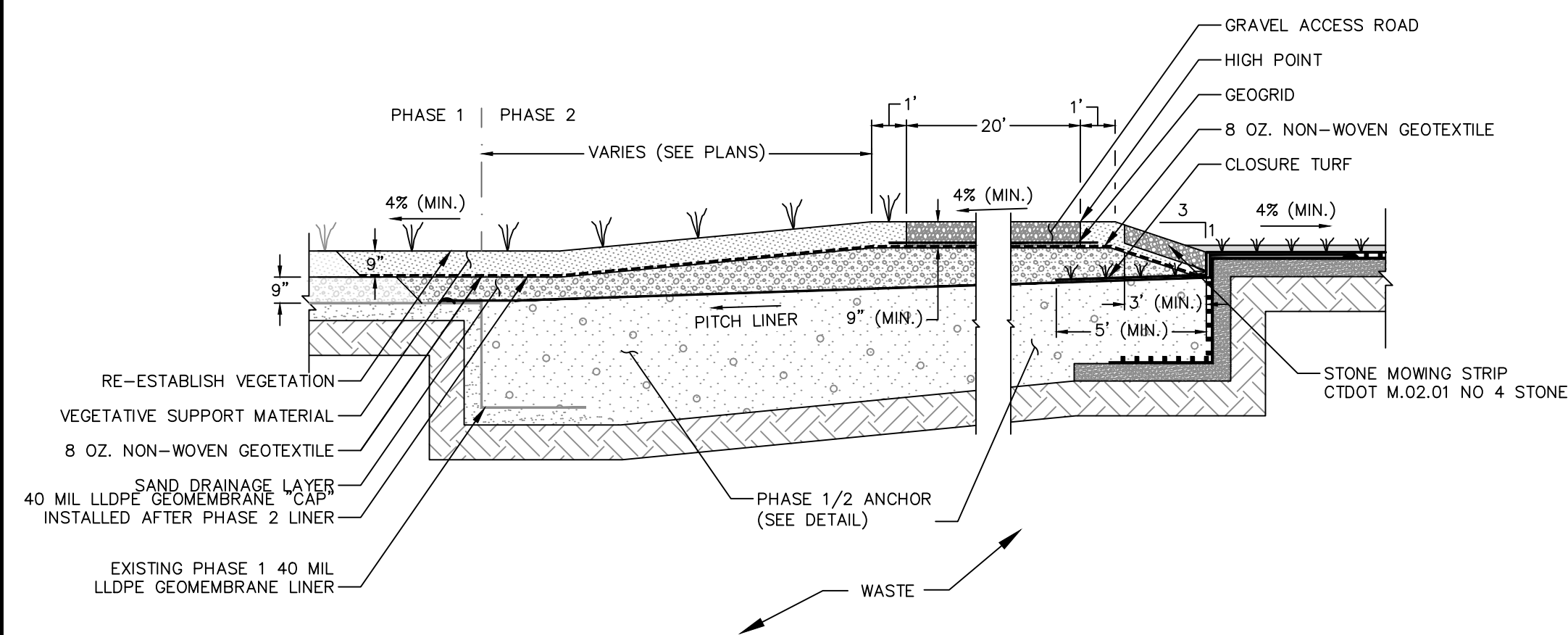
1 TYPE "A" CAP ANCHOR (TYPICAL CAP ANCHOR) - CLOSURE TURF™ ALTERNATIVE  
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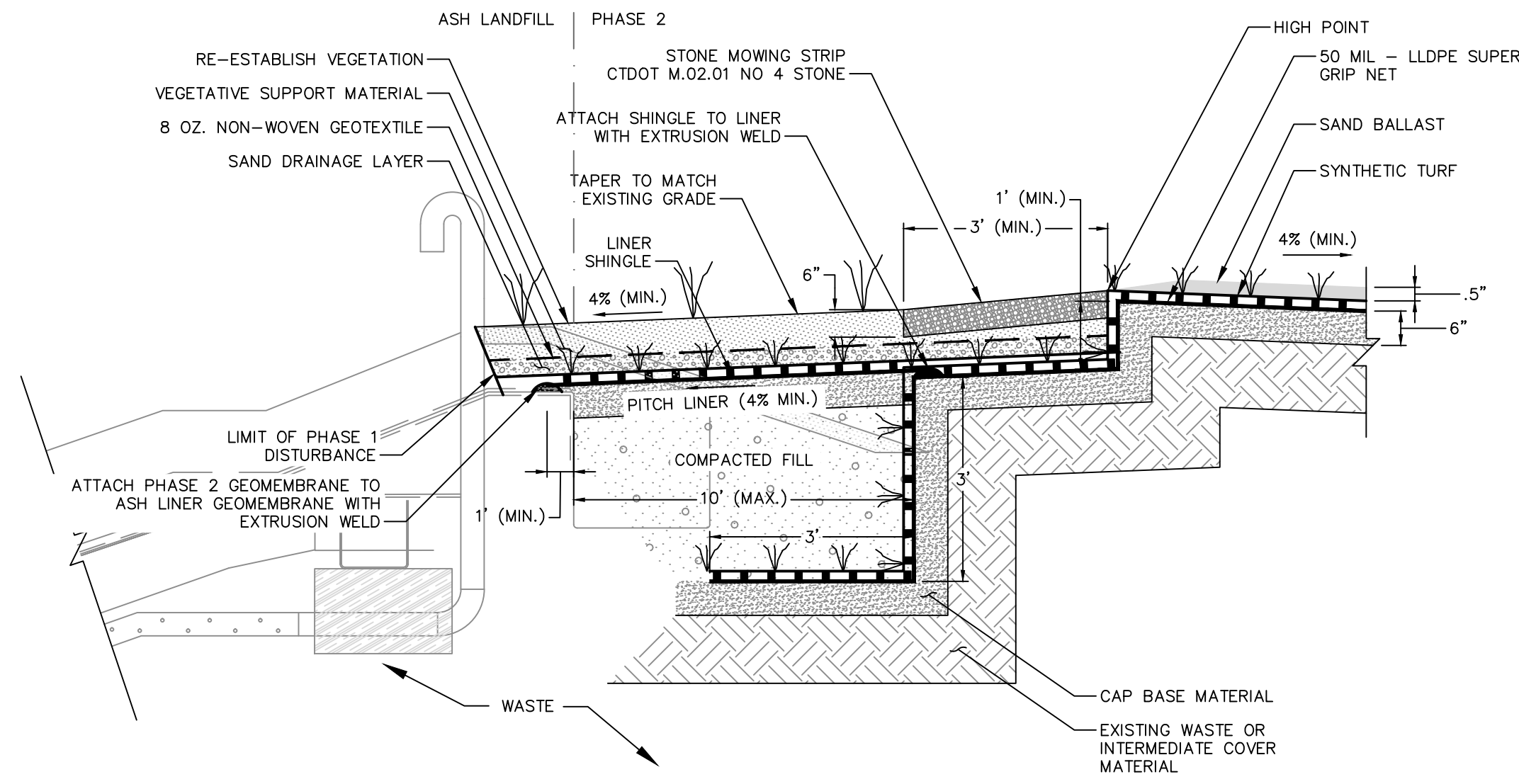
2 TYPE "B" CAP ANCHOR (TYPICAL CAP ANCHOR WITH CONCRETE) - CLOSURE TURF™ ALTERNATIVE  
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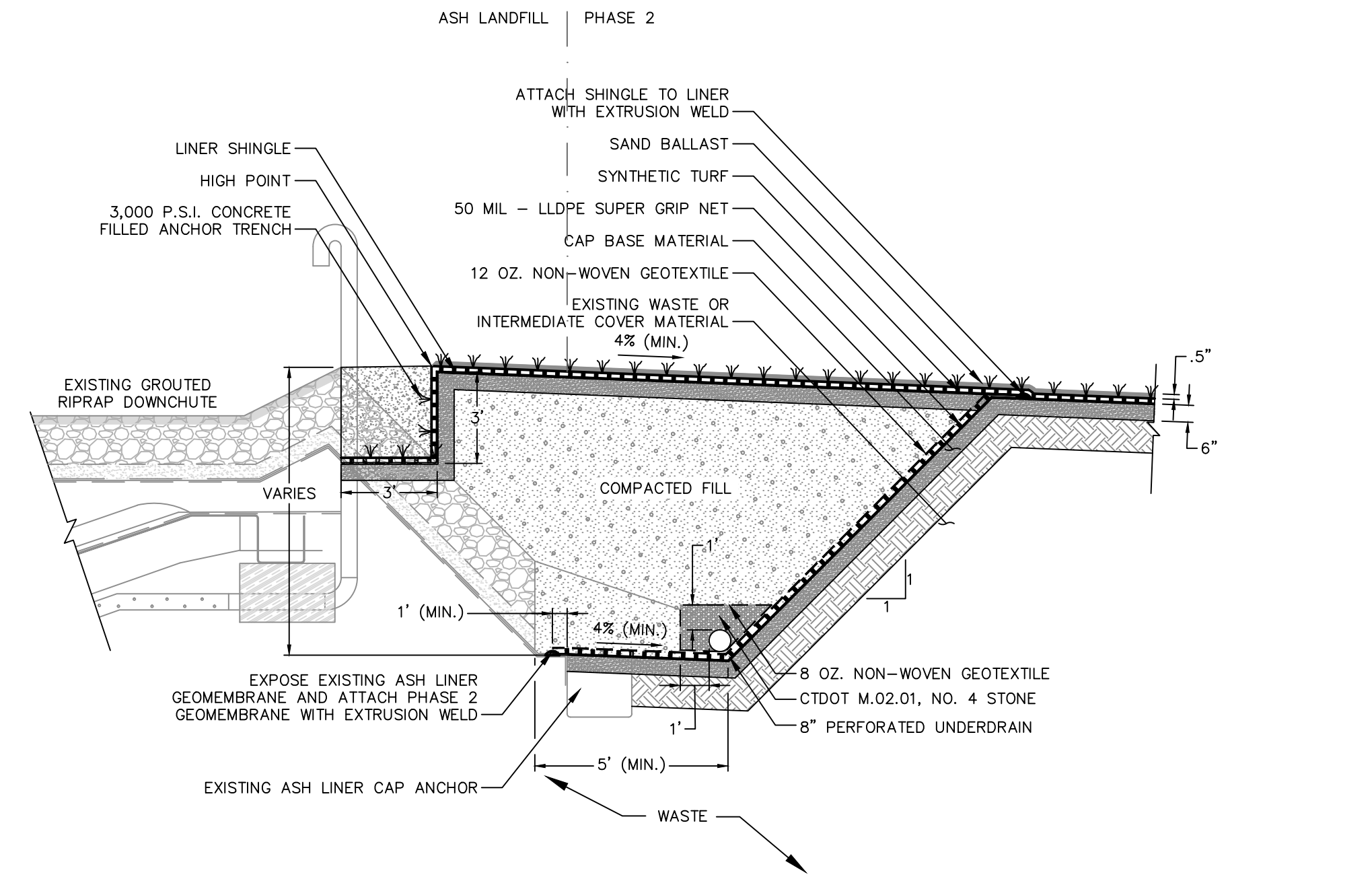
3 TYPE "C" CAP ANCHOR (PHASE 1/2 ANCHOR) - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE



4 TYPE "D" CAP ANCHOR (TYPICAL GRAVEL ACCESS ROAD & ANCHOR) - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE



5 TYPE "E" CAP ANCHOR (PHASE 2/ASH LINER ANCHOR) - CLOSURE TURF™ ALTERNATIVE  
NOT TO SCALE



6 TYPE "F" CAP ANCHOR (PHASE 2/ASH LINER DOWNCHUTE ANCHOR) - CLOSURE TURF™ ALTERNATIVE  
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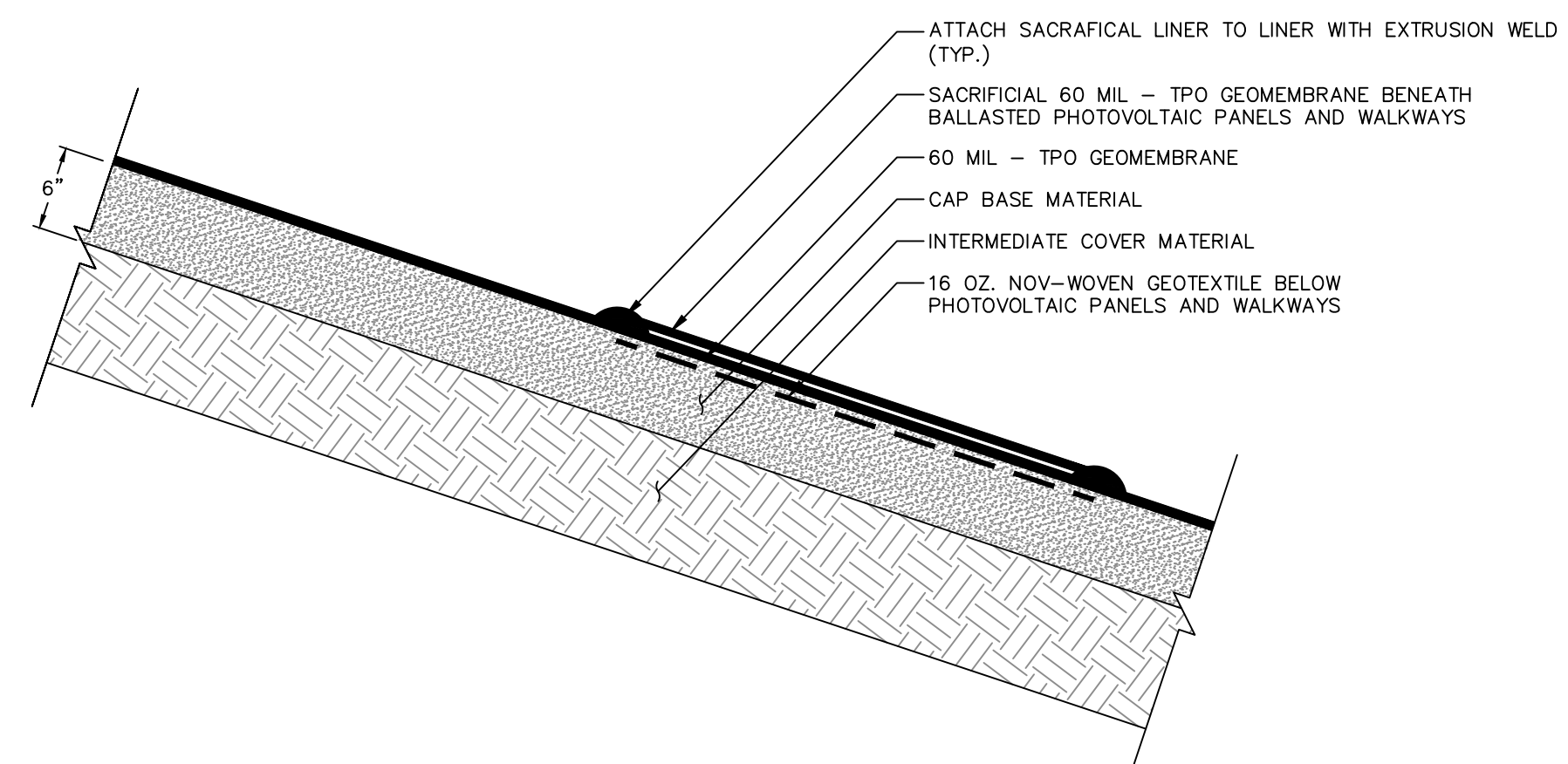
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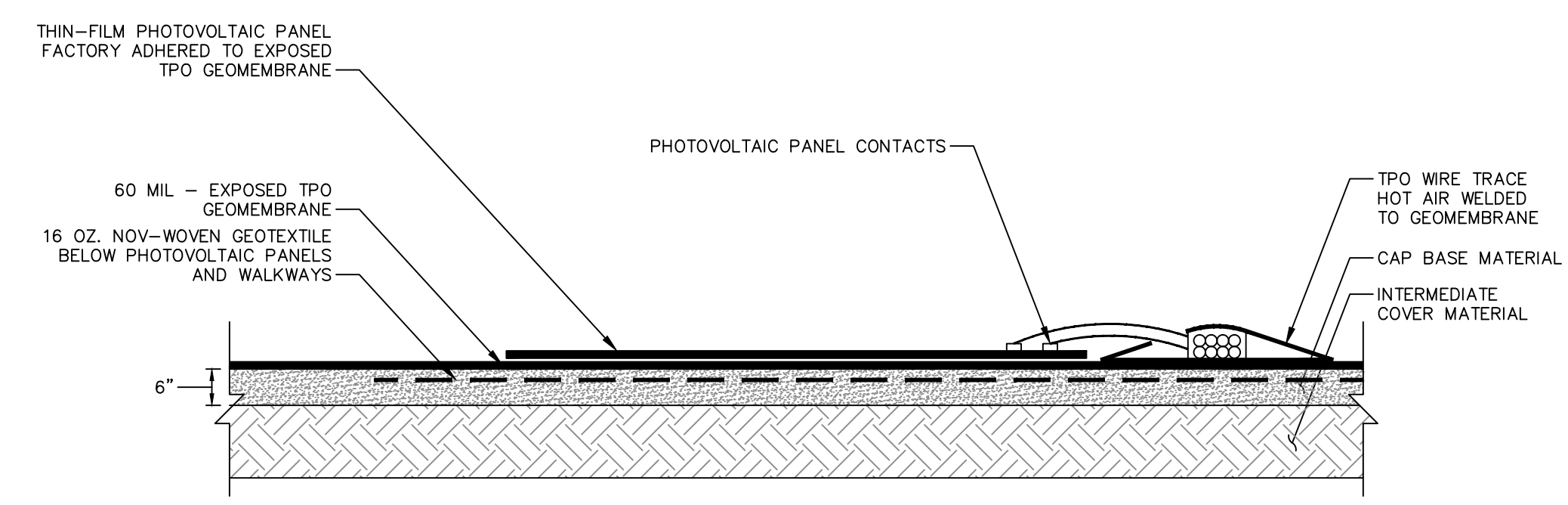
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 COVER SYSTEM DETAILS  
 CLOSURE TURF ALTERNATIVE  
 PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
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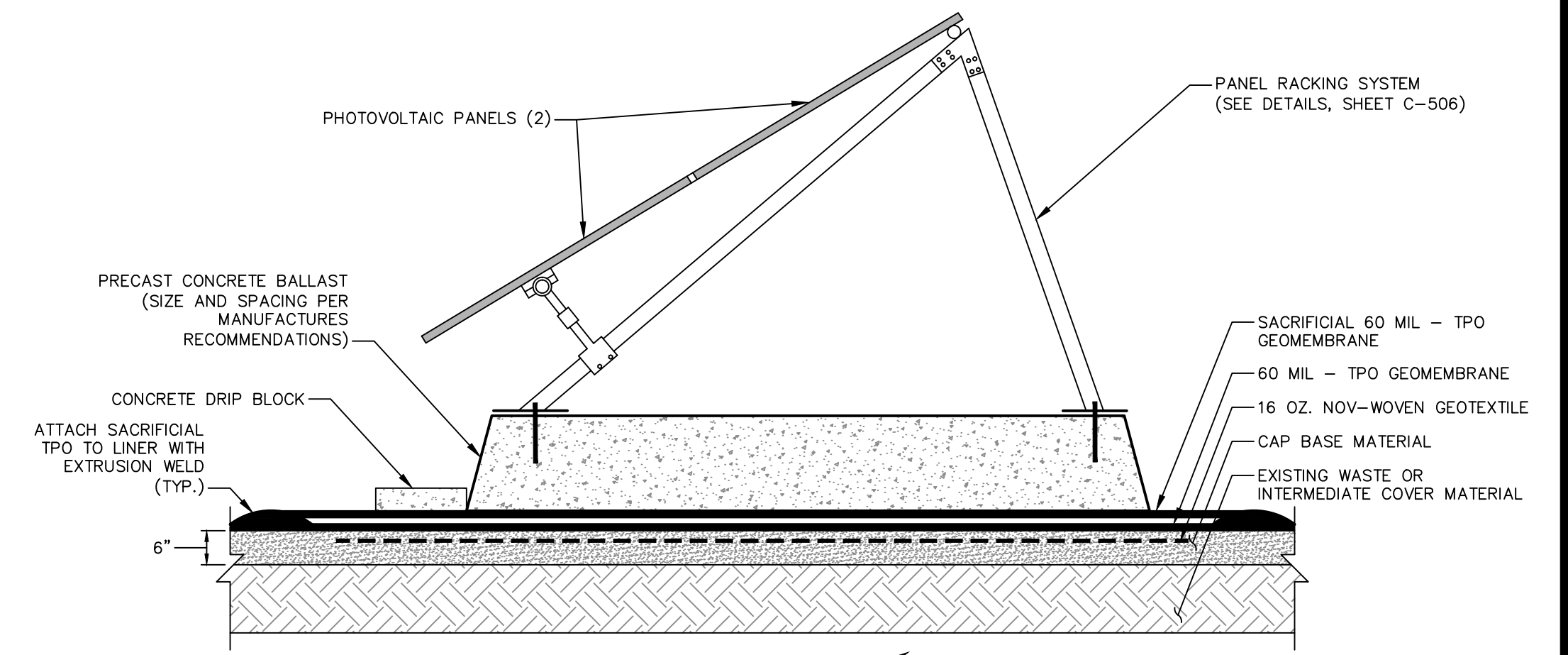
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1 TYPICAL CAP SECTION - EXPOSED TPO ALTERNATIVE  
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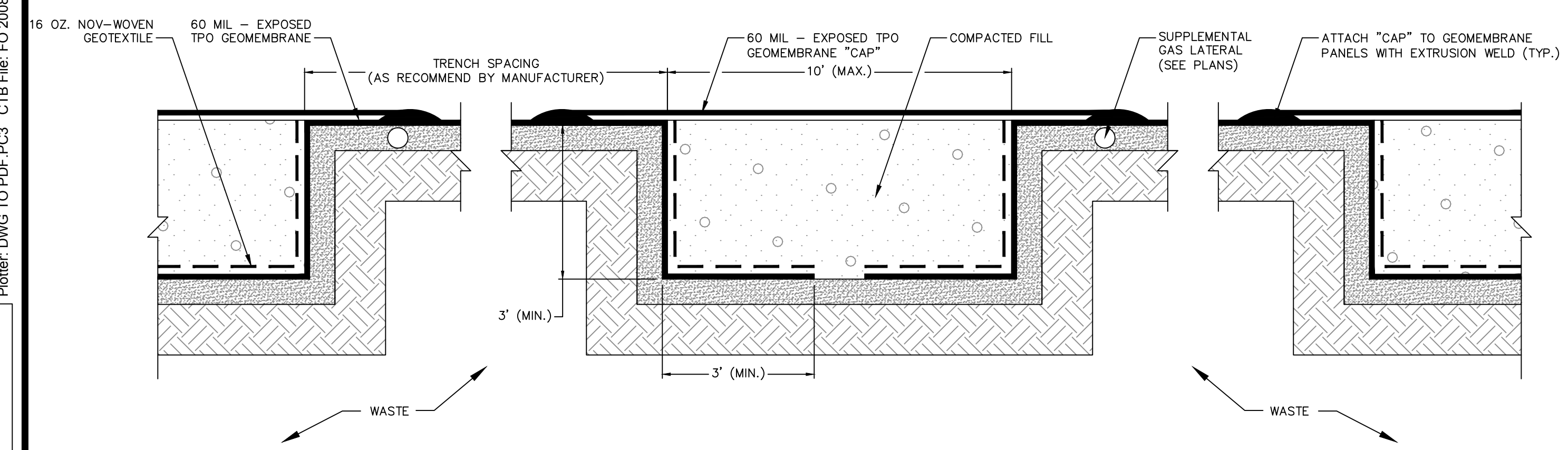


2 TYPICAL FLEXIBLE SOLAR PANEL INSTALLATION - EXPOSED TPO ALTERNATIVE  
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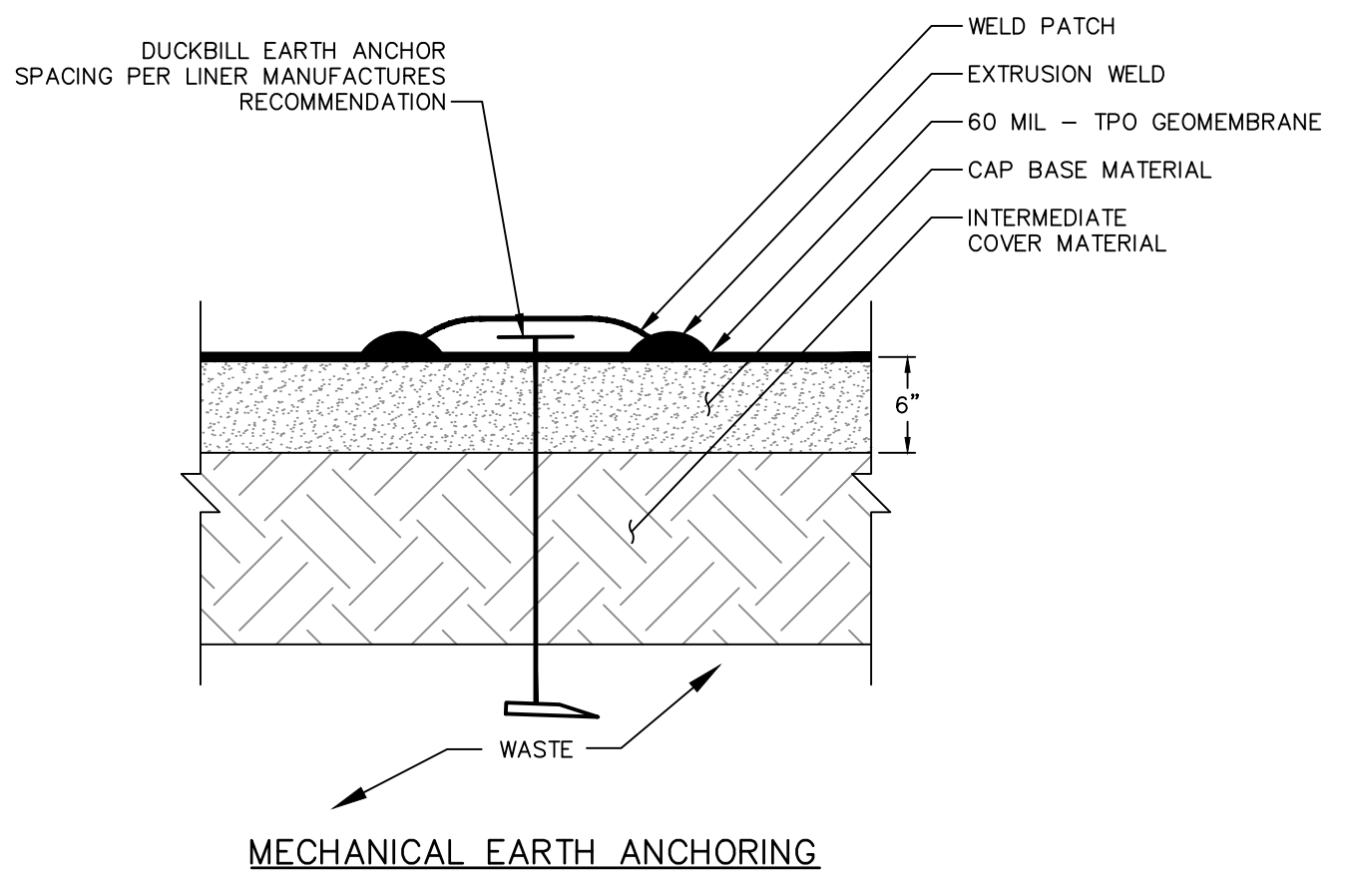


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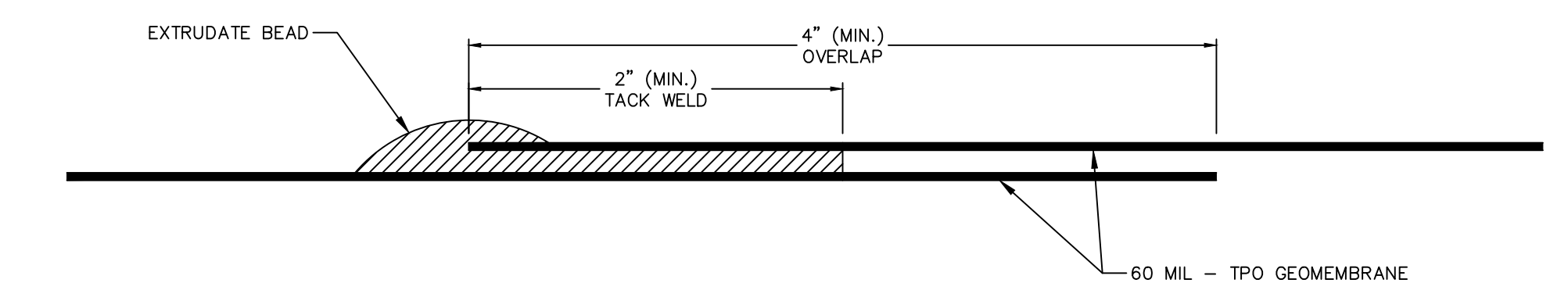
NOTE: FOUNDATION SYSTEM, PV RACKING SYSTEM, AND PV SYSTEM SHALL BE DESIGNED BY CONTRACTOR AND SHALL NOT EXCEED A MAXIMUM BEARING PRESSURE OF 200 PSF (1.4 PSI)



4 TYPICAL LINER ANCHORING METHODS - EXPOSED TPO ALTERNATIVE  
NOT TO SCALE



5 TYPICAL HOT WEDGE FUSION WELD - EXPOSED TPO ALTERNATIVE  
NOT TO SCALE



6 TYPICAL EXTRUSION WELD - EXPOSED TPO ALTERNATIVE  
NOT TO SCALE

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CONNECTICUT RESOURCES RECOVERY AUTHORITY

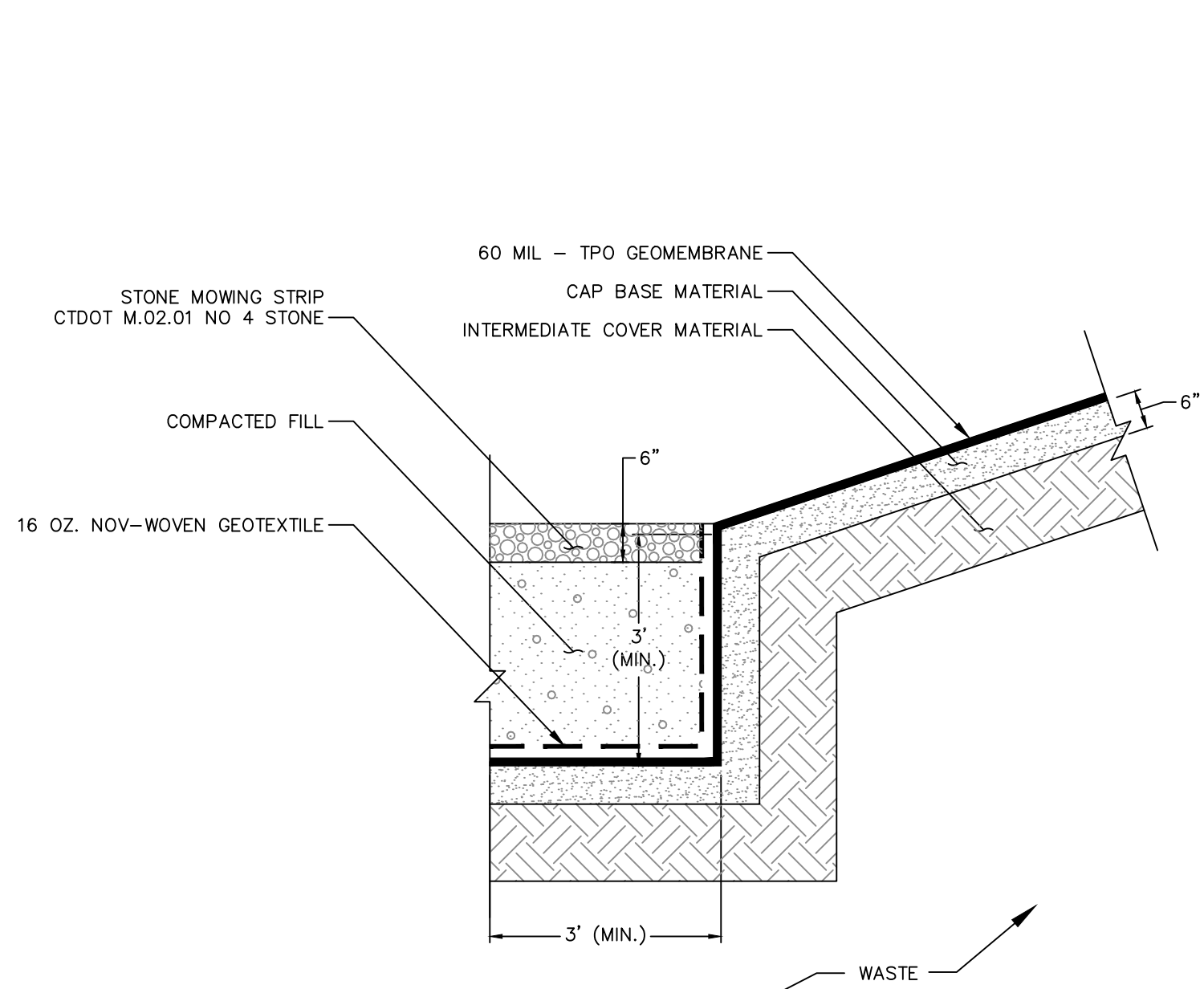
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EXPOSED TPO ALTERNATIVE

PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT

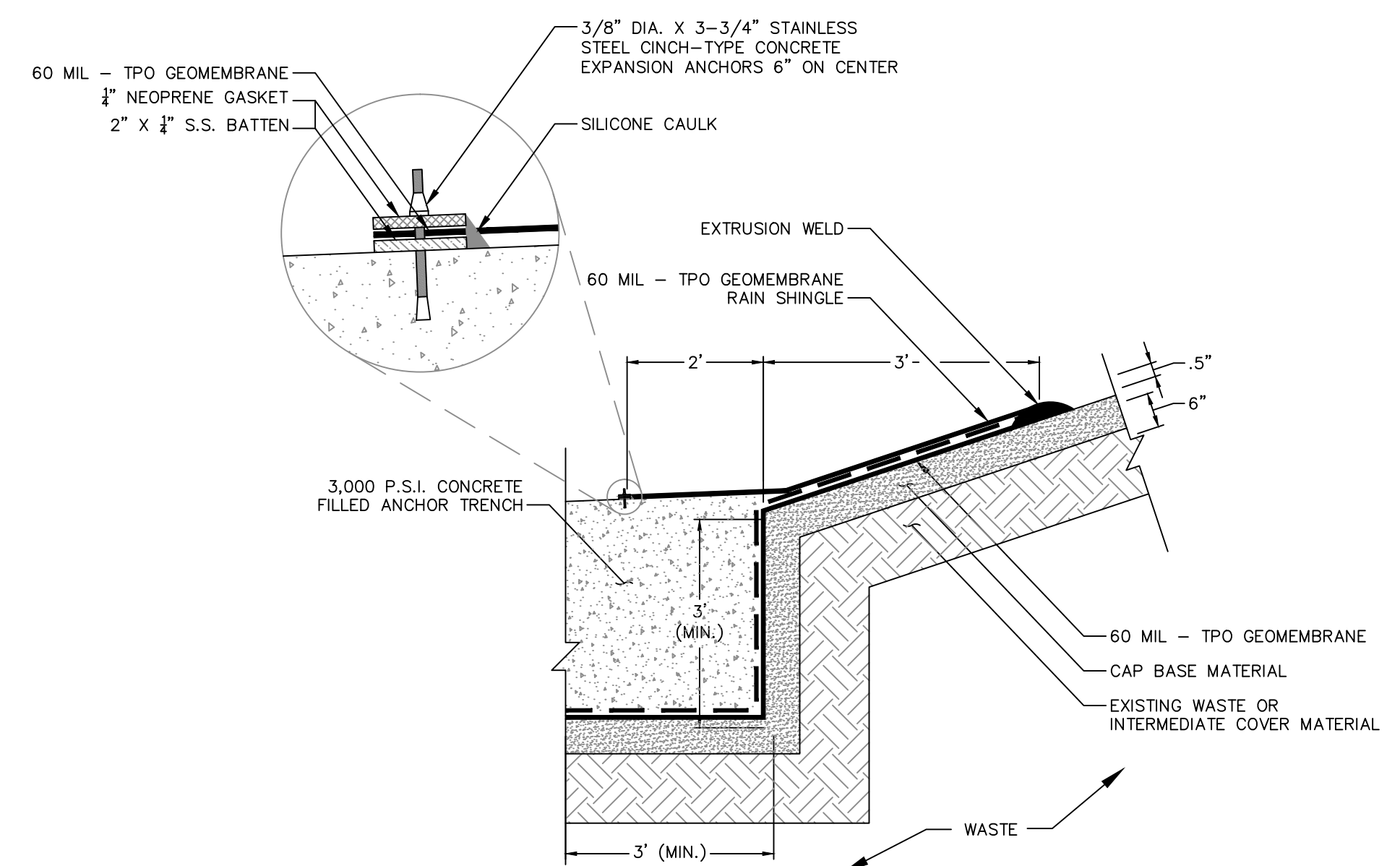
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PROJ. No.: 2010 0123.H20  
DATE: 03/05/2013

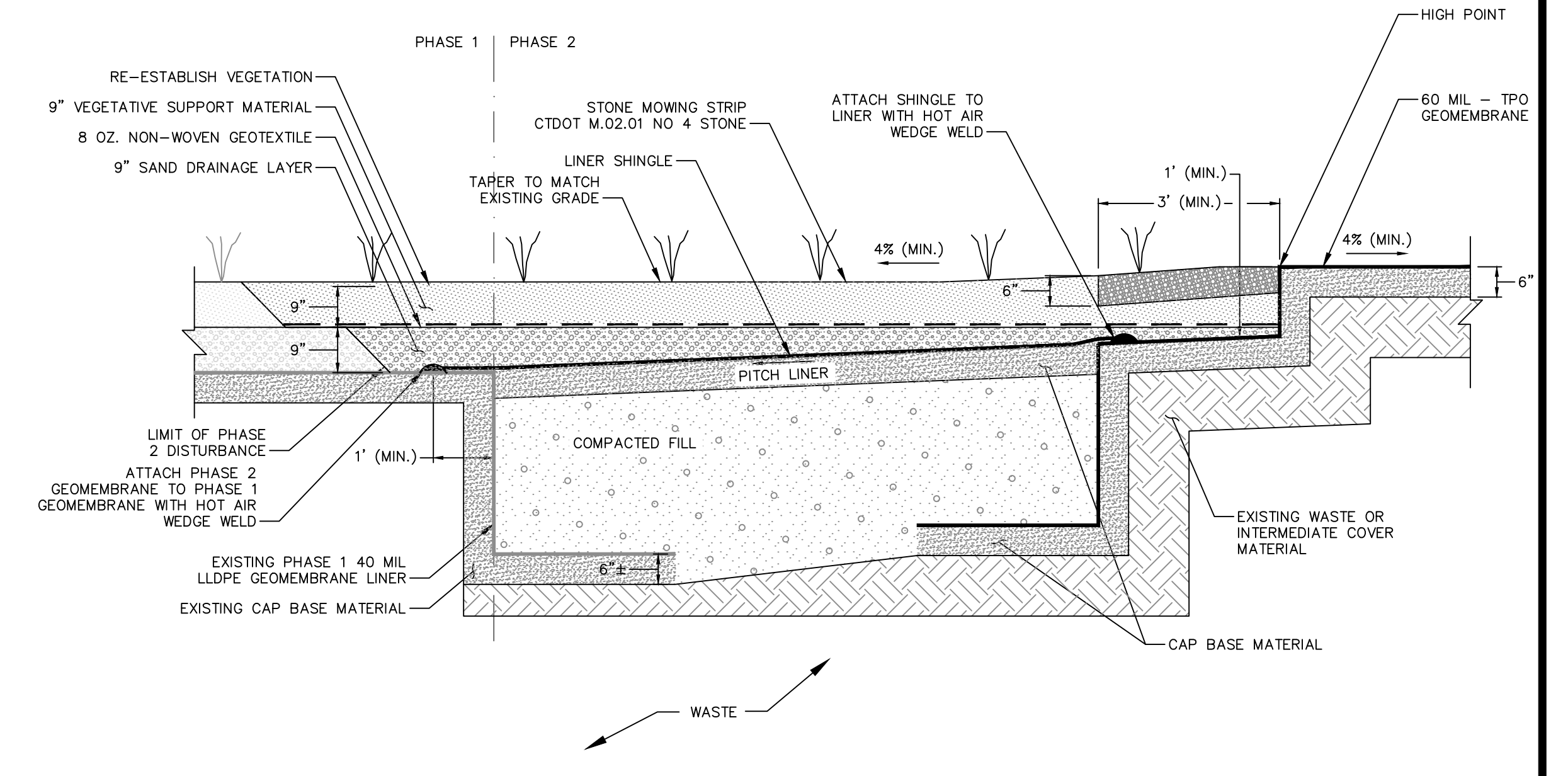
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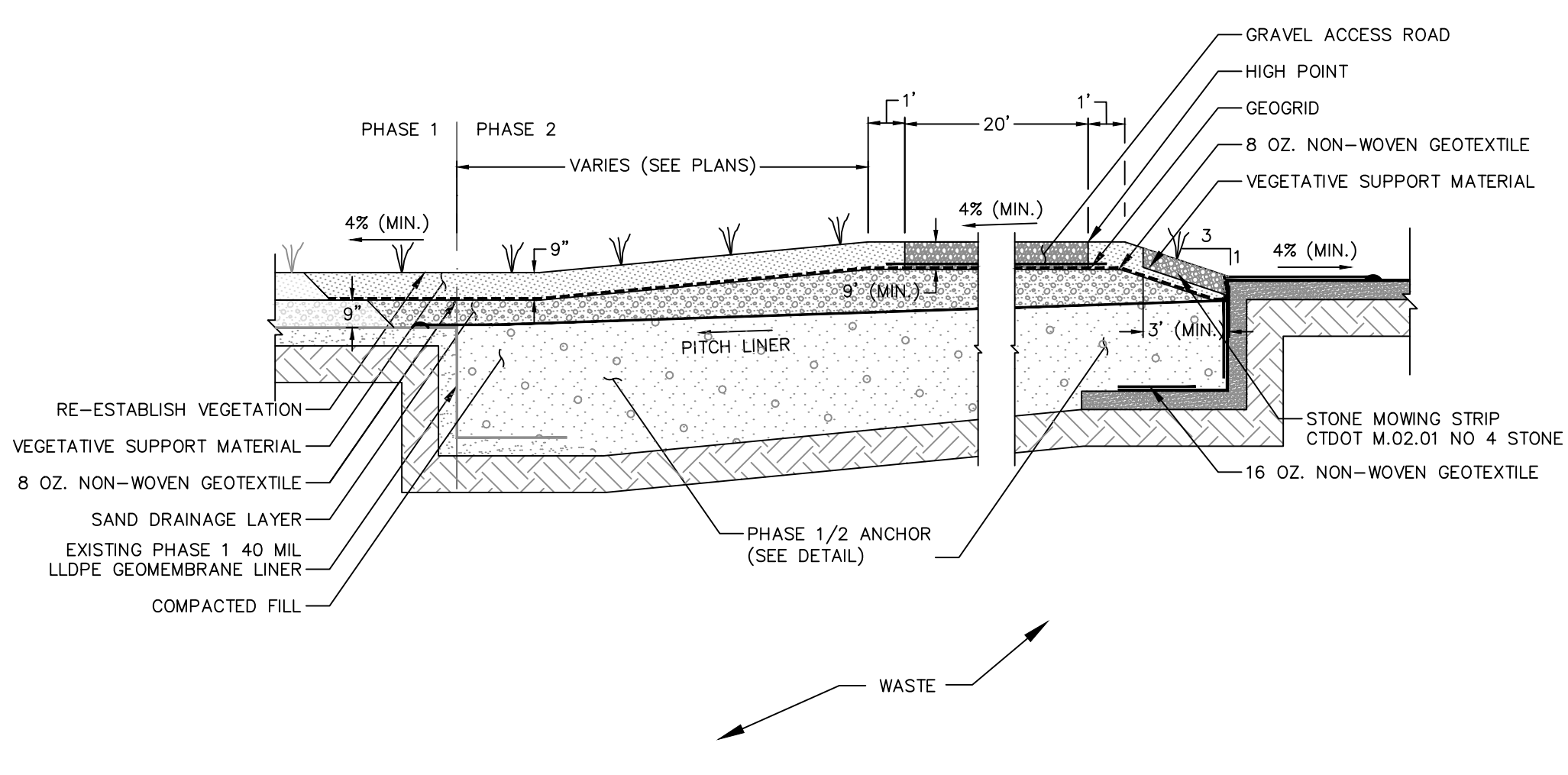
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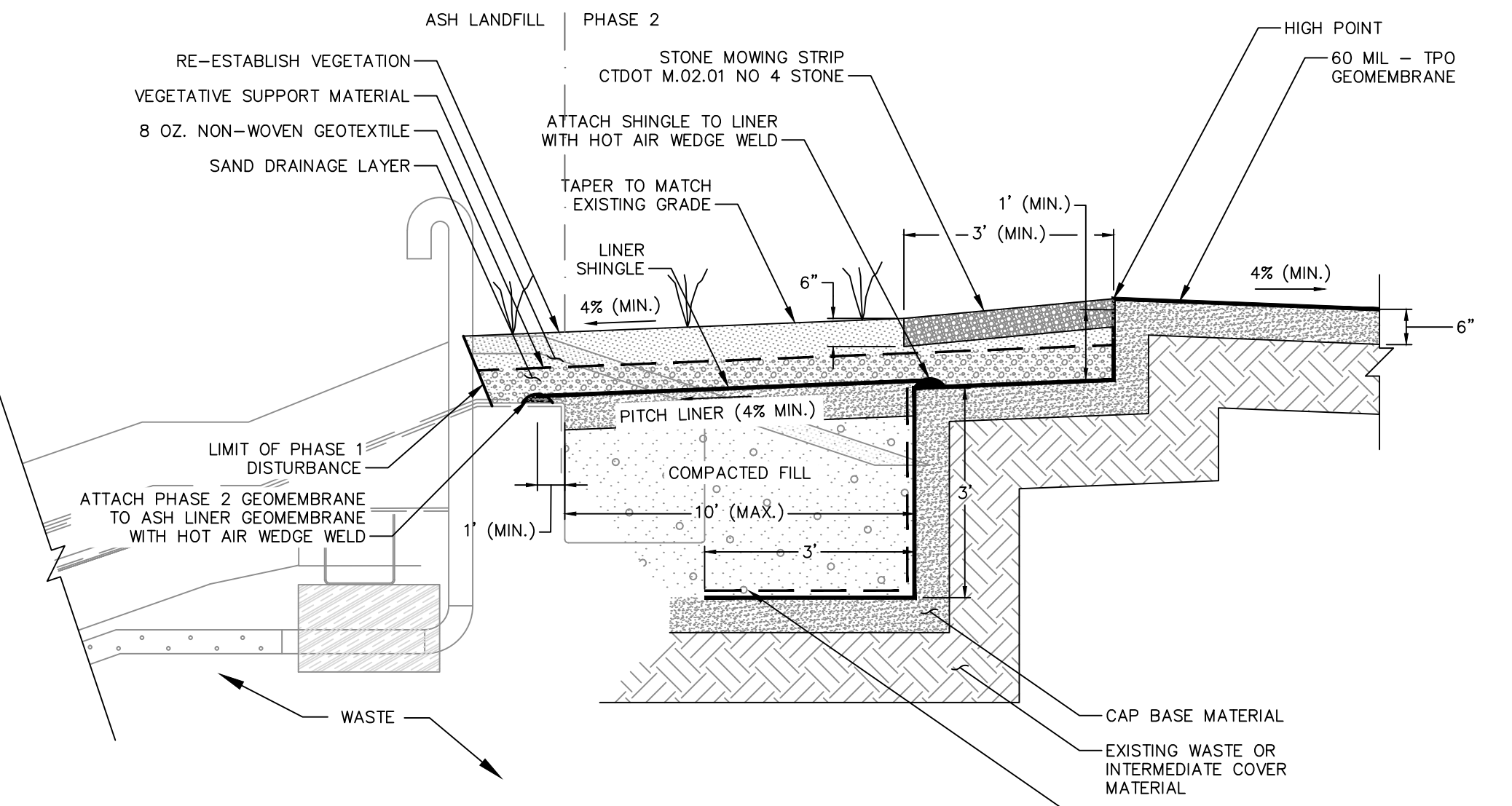
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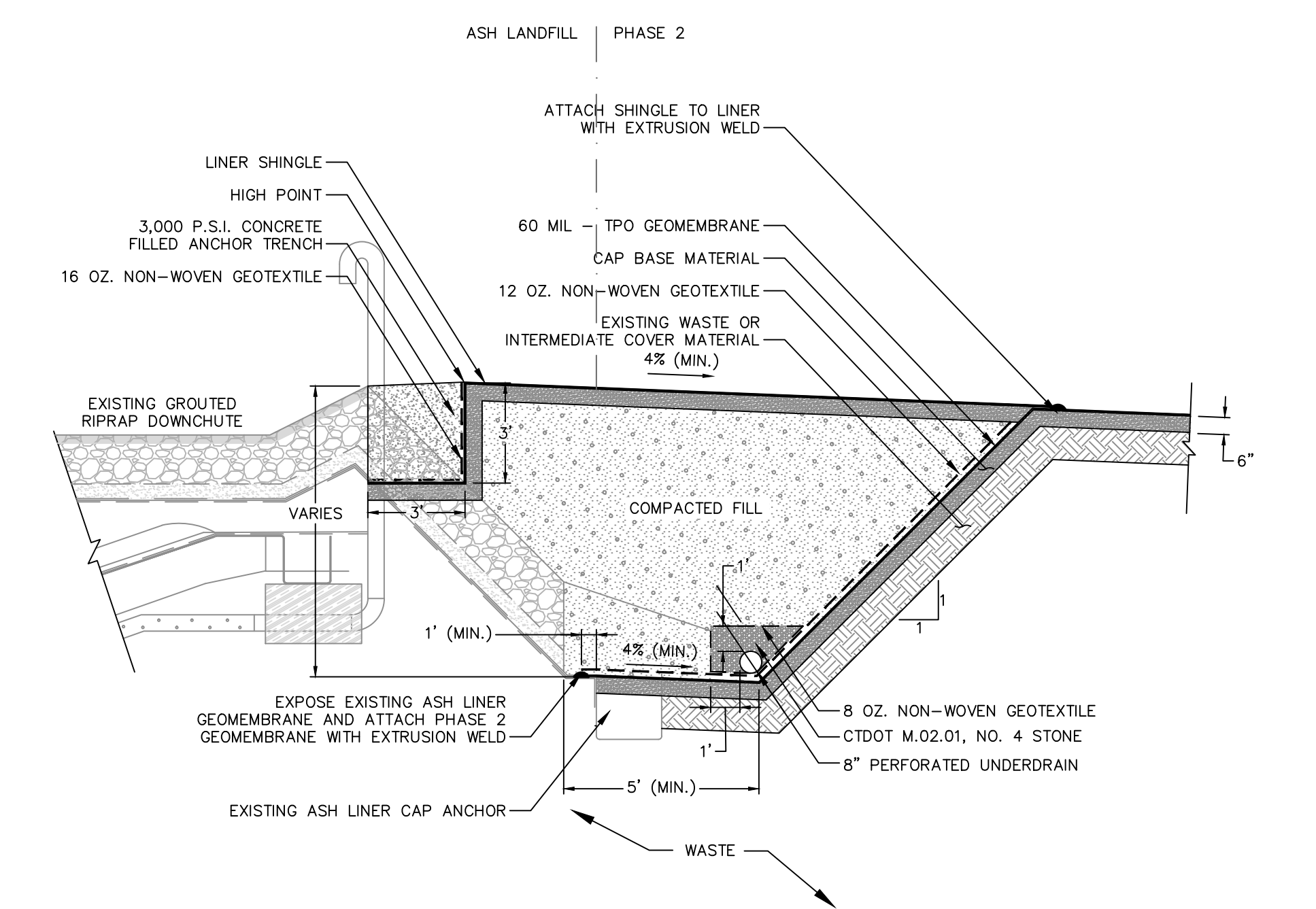
4 TYPE "C" CAP ANCHOR (PHASE 1/2 ANCHOR) - EXPOSED TPO ALTERNATIVE  
NOT TO SCALE



5 TYPE "D" CAP ANCHOR (TYPICAL GRAVEL ACCESS ROAD & ANCHOR) - EXPOSED TPO ALTERNATIVE  
NOT TO SCALE



4 TYPE "E" CAP ANCHOR (PHASE 2/ASH LINER ANCHOR) - EXPOSED TPO ALTERNATIVE  
NOT TO SCALE



5 TYPE "F" CAP ANCHOR (PHASE 2/ASH LINER DOWNCHUTE ANCHOR) - EXPOSED TPO ALTERNATIVE  
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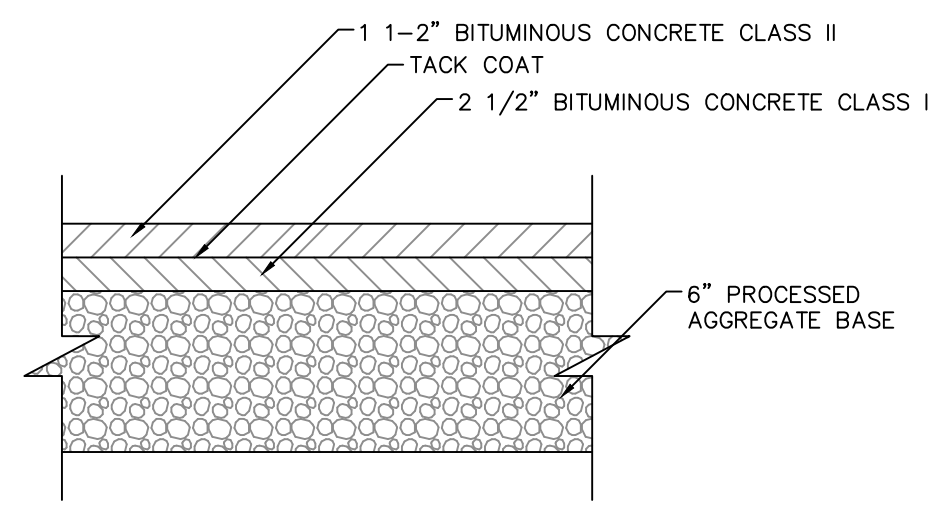
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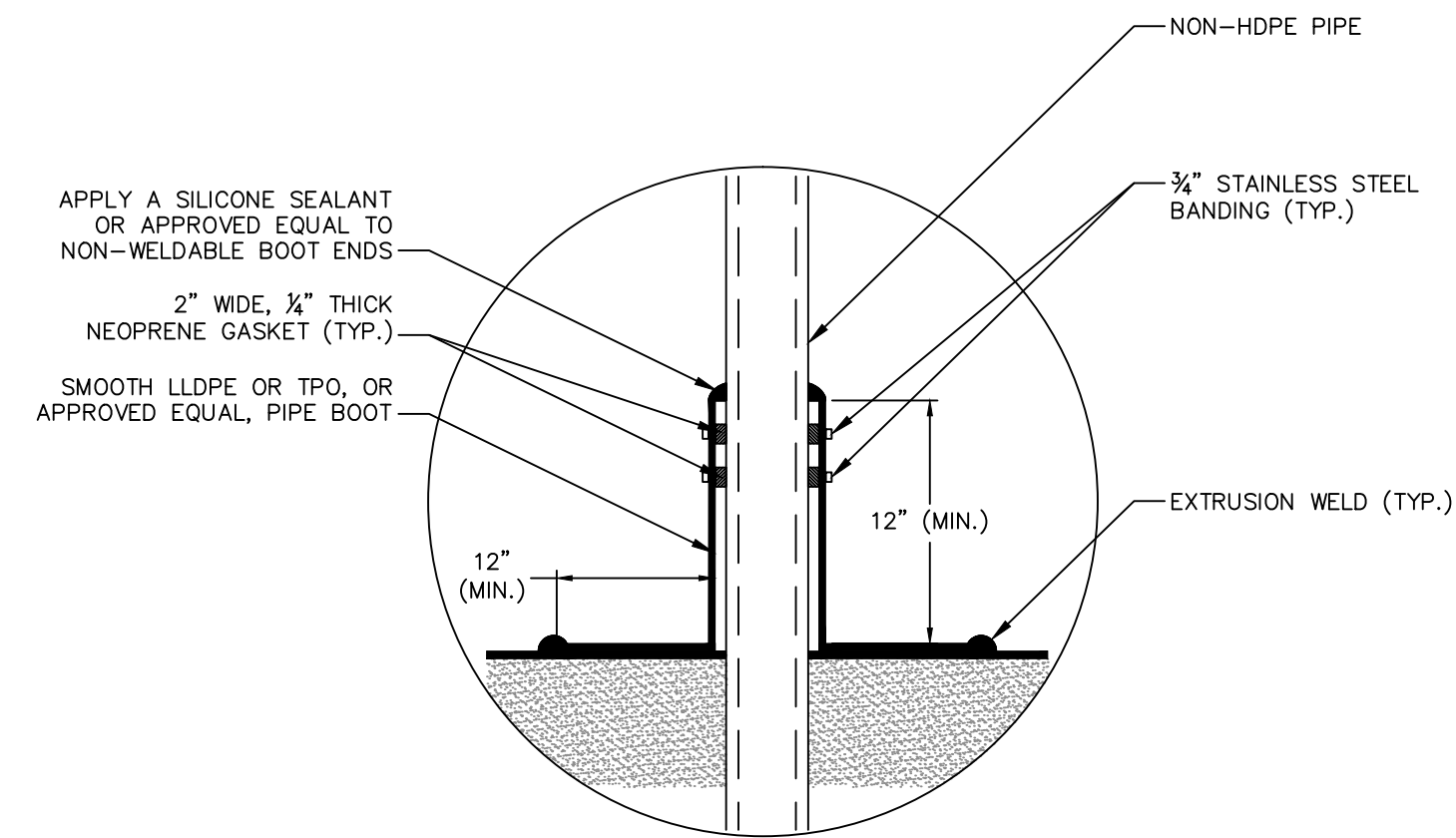
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 EXPOSED TPO ALTERNATIVE  
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 DATE: 03/05/2013  
**C-5.05**

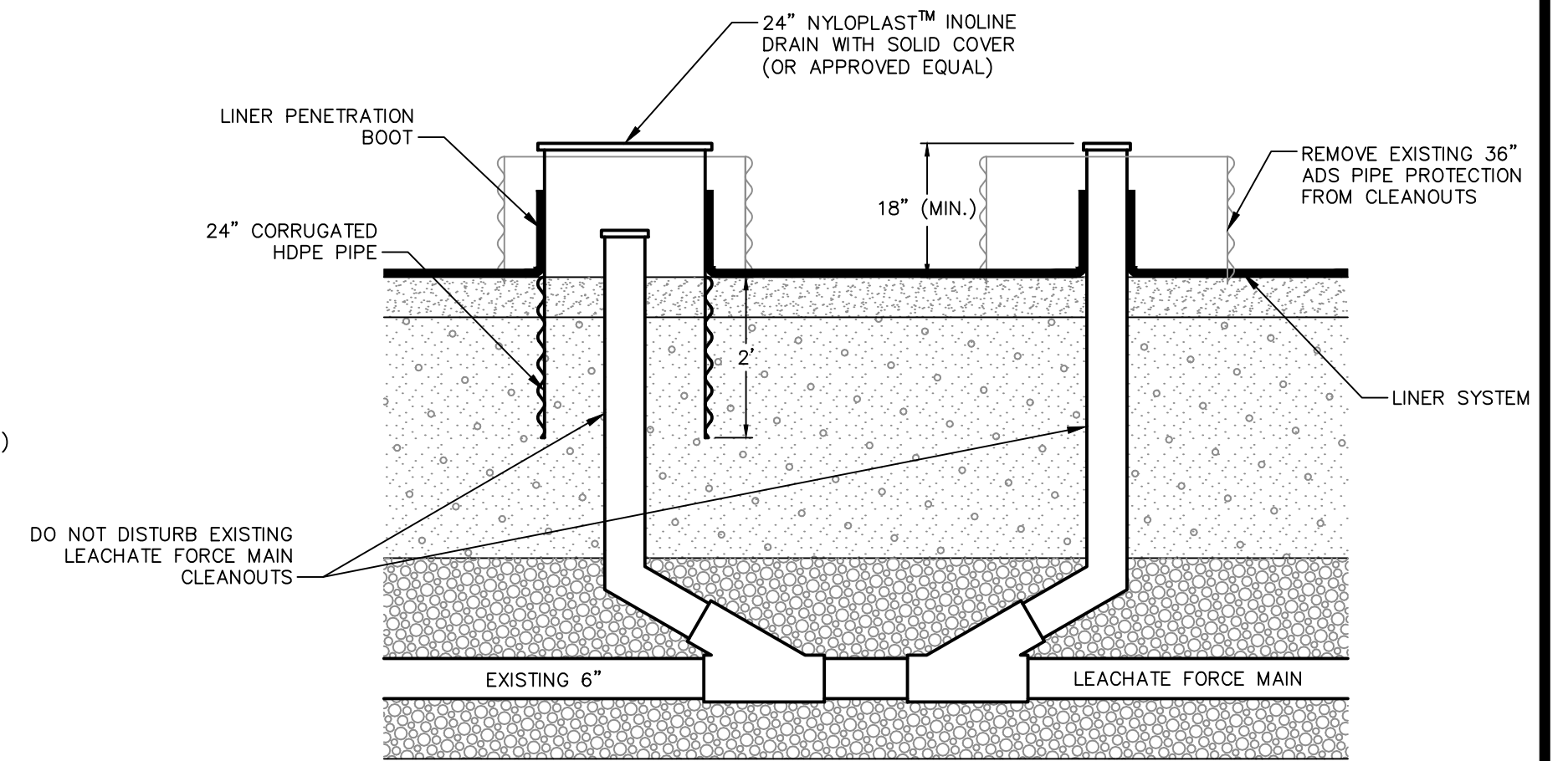


1 BITUMINOUS CONCRETE PAVEMENT  
NOT TO SCALE



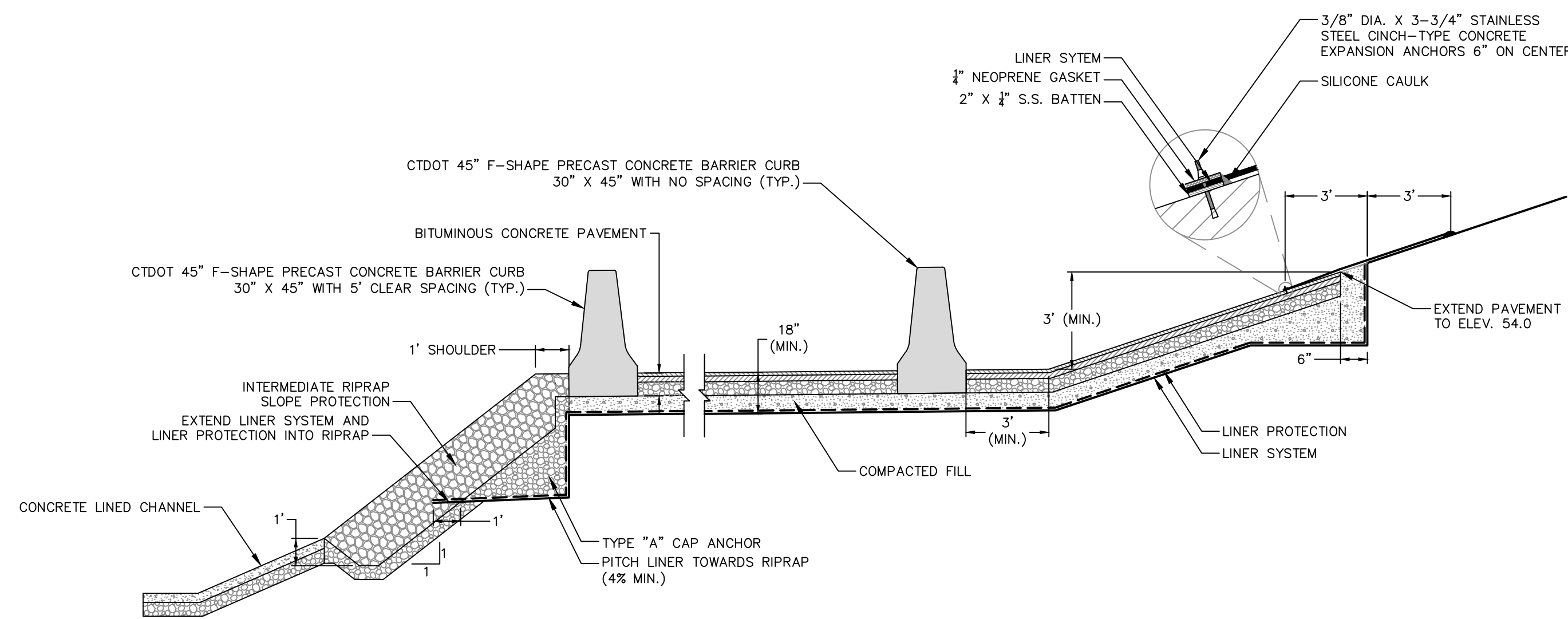
NOTE:  
1. USE BOOT METHOD SHOWN ABOVE FOR ALL LINER PENETRATIONS, INCLUDING GAS EXTRACTION WELLS, LEACHATE COLLECTION PIPES, CURB BOXES, ETC.  
2. ALL PENETRATIONS WILL BE TESTED FOR AIR TIGHTNESS IN THE PRESENCE OF THE ENGINEER PRIOR TO ACCEPTANCE.

2 LINER PENETRATION BOOT  
NOT TO SCALE



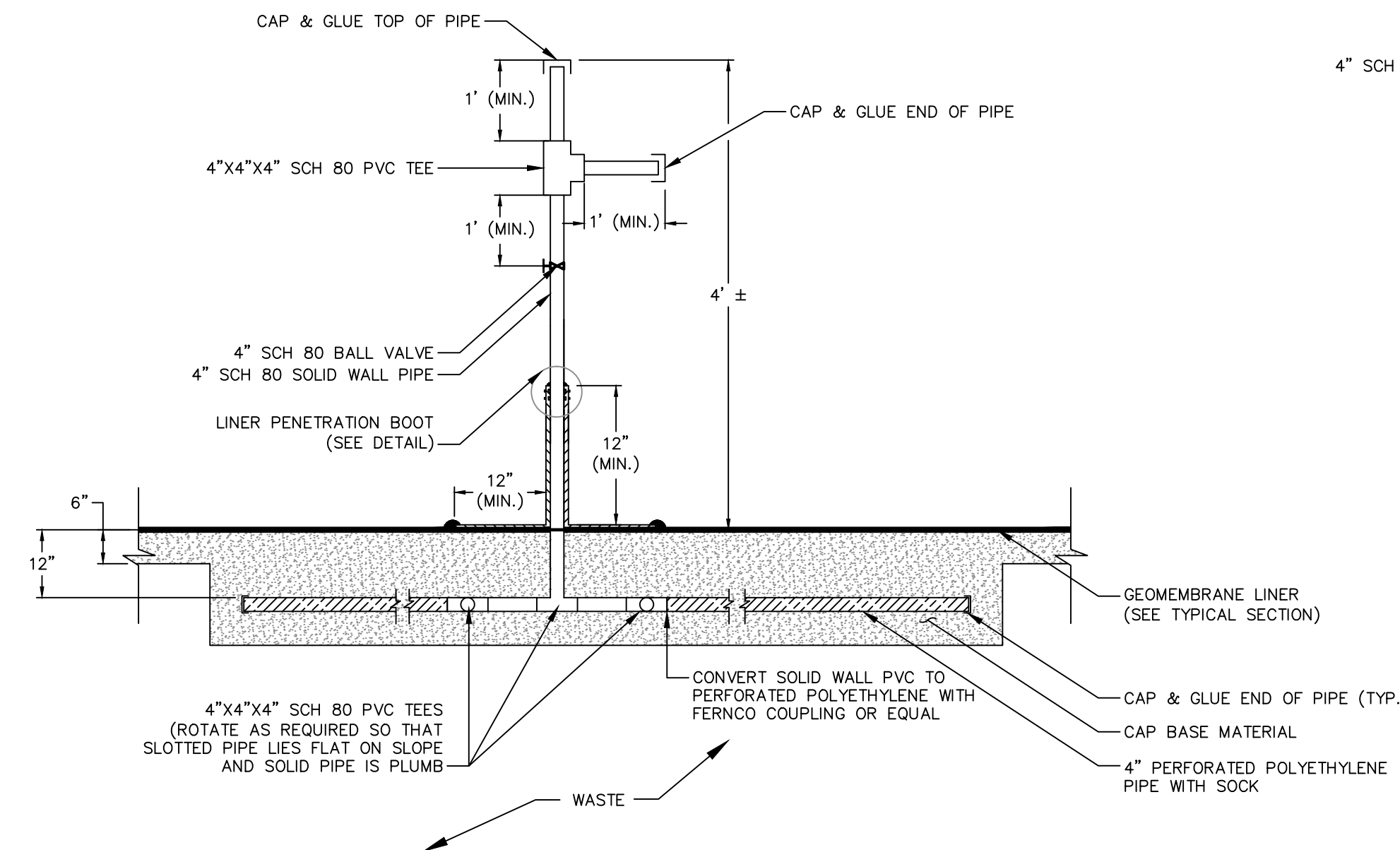
NOTE:  
1. WHERE EXISTING FLANGE ELEVATION IS LESS THAN 18\"/>

3 PIPE CLEANOUT DETAIL  
NOT TO SCALE



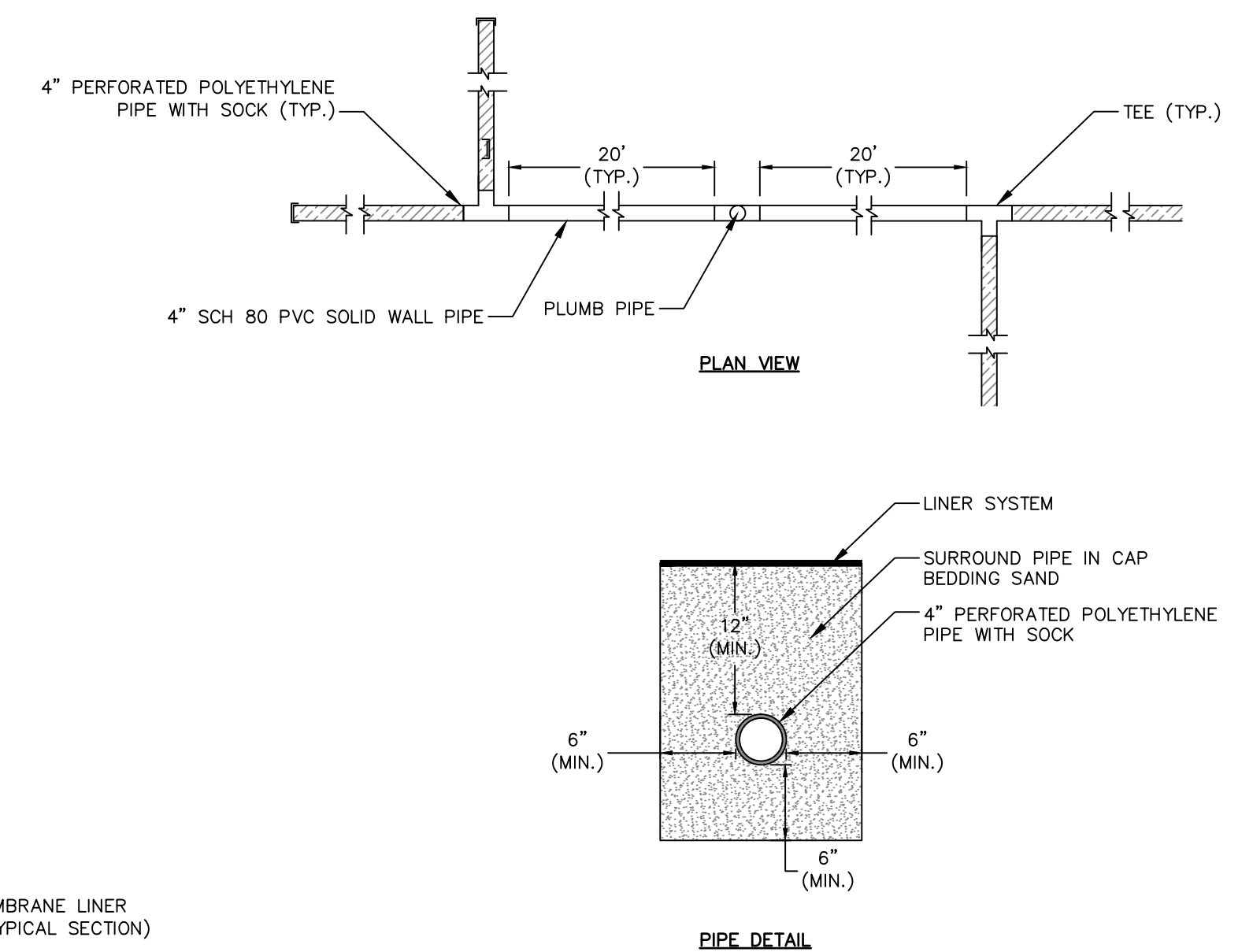
LINER PROTECTION NOTE:  
LINER PROTECTION SHALL BE 16 OZ. NON-WOVEN GEOTEXTILE FOR 50 MIL - LLDPE SUPER GRIP NET OR GEONET FOR 60 MIL - TPO GEOMEMBRANE

4 SOUTHEAST PAVED AREA SECTION (SECTION A-A)  
NOT TO SCALE



NOTE:  
ALL PVC TO PVC AND PE TO PE CONNECTIONS ARE TO BE GLUED. USE A FERNCO FOR PE TO PVC CONNECTIONS.

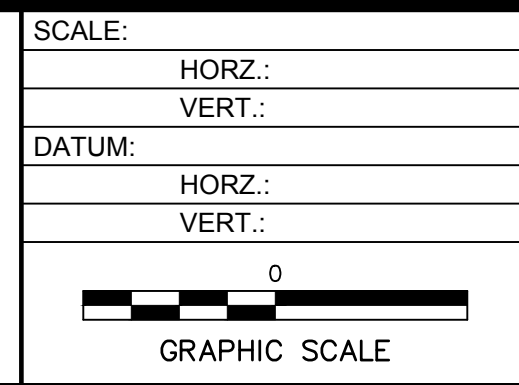
5 SUPPLEMENTAL CAP BASE VENTING DETAIL  
NOT TO SCALE



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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

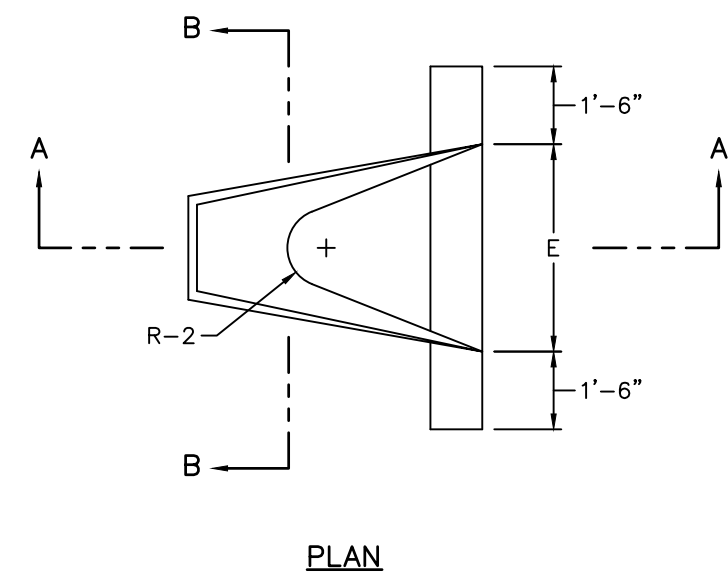
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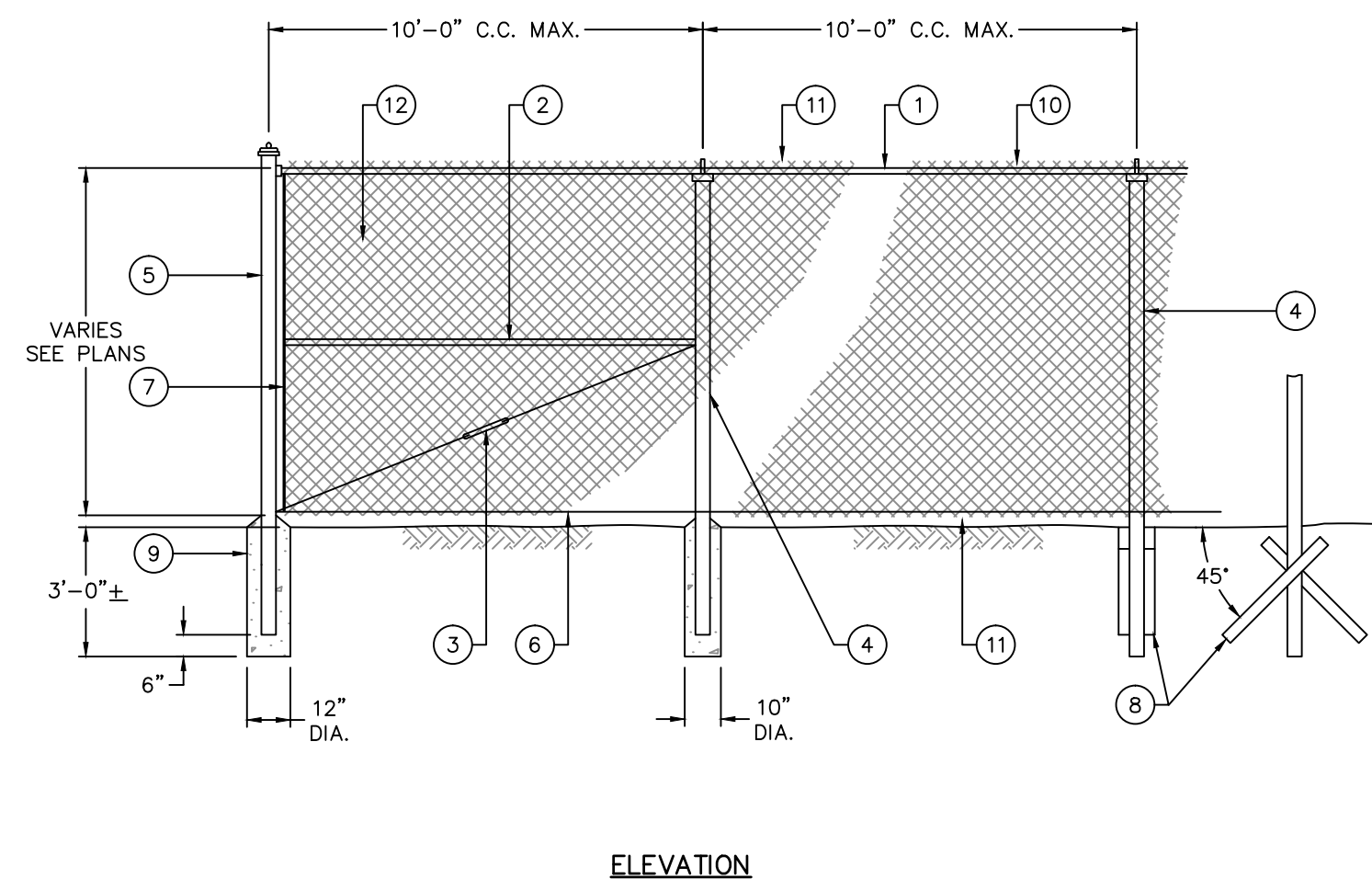
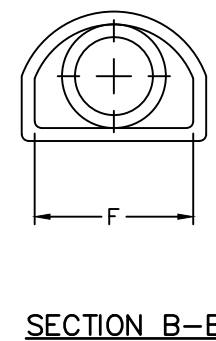
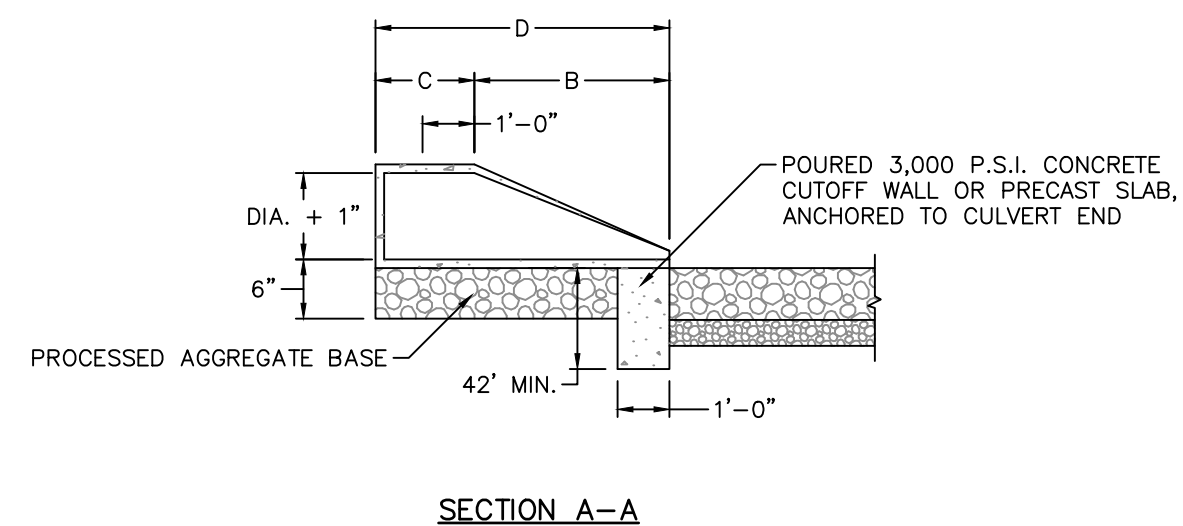
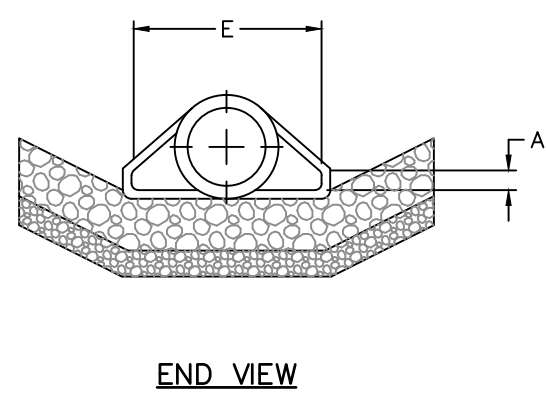
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CONNECTICUT RESOURCES RECOVERY AUTHORITY  
SITE DETAILS  
PHASE II MSW AREA CLOSURE & PV SYSTEM PROJECT  
HARTFORD CONNECTICUT

PROJ. No.: 2010 0123.H20  
DATE: 03/05/2013  
**C-5.06**



DIMENSIONS						
DIA.	A	B	C	D	E	F
12"	4"	2'-0"	6'-0 3/8"	6'-0 3/8"	2'-0"	1'-7 15/16"
15"	6"	2'-3"	3'-10"	6'-1"	2'-6"	2'-0 5/16"
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"	2'-5"
24"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	2'-9 3/16"
30"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3'-1"
36"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3'-11 13/16"
42"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	4'-5 7/8"
48"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	4'-8 1/2"



- NOTES**
- FOOTING DESIGN TO BE CHECKED BY AN ENGINEER FOR WIND LOADS IF SLATS ARE USED OR IF POOR SOIL CONDITIONS EXIST.
  - STRAIGHT RUNS BETWEEN BRACED POSTS SHALL NOT EXCEED 500 FT.
  - FENCE DETAILS ARE INTENDED AS A GUIDE ONLY. ALL FENCE MATERIALS AND CONSTRUCTION METHODS SHALL BE APPROVED BY THE ENGINEER AND FENCE MANUFACTURER.

- CHAIN LINK FENCE LEGEND**
- 1 5/8" O.D. TOP RAIL ATTACH FABRIC WITH 9 GAUGE WIRE CLIP EVERY 24"
  - 1 5/8" O.D. BRACE FOR RAIL FENCES OVER 6 FEET HIGH AND ALL FENCES WITHOUT TOP RAIL
  - 5/16" TRUSS ROD AND TURNBUCKLE
  - INTERMEDIATE POST
 

FENCE HEIGHT	SQUARE POST	ROUND POST
6 FEET AND LESS	1 7/8"	2"
OVER 6 FEET	2 1/4"	2 1/2"

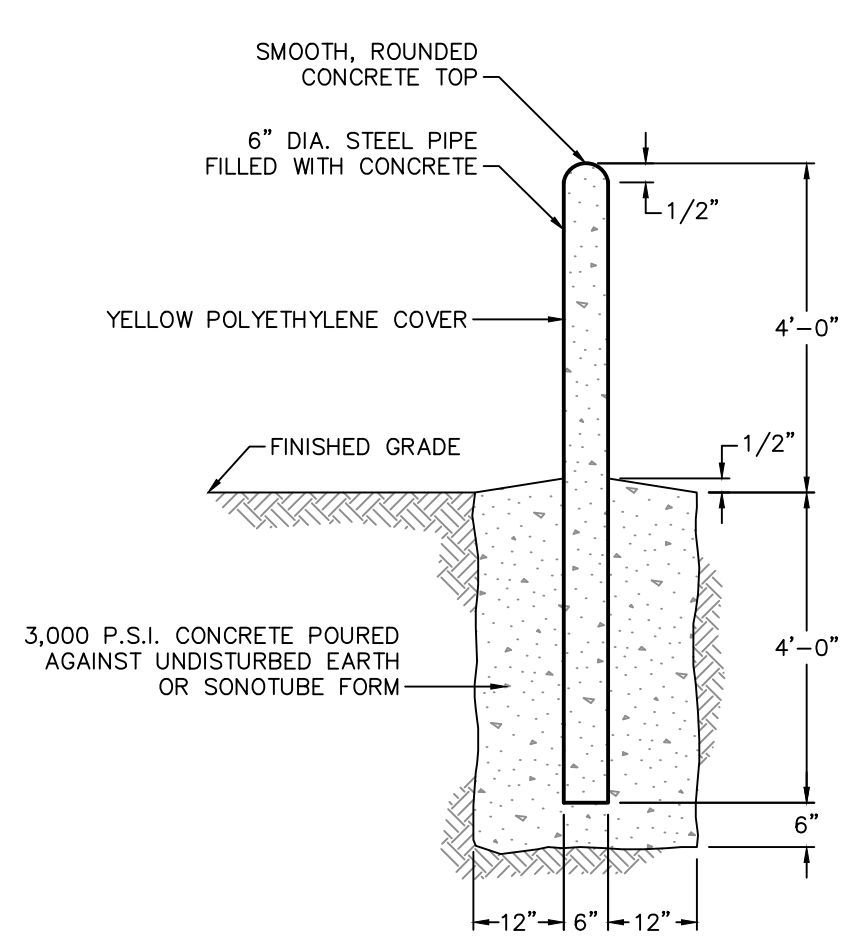
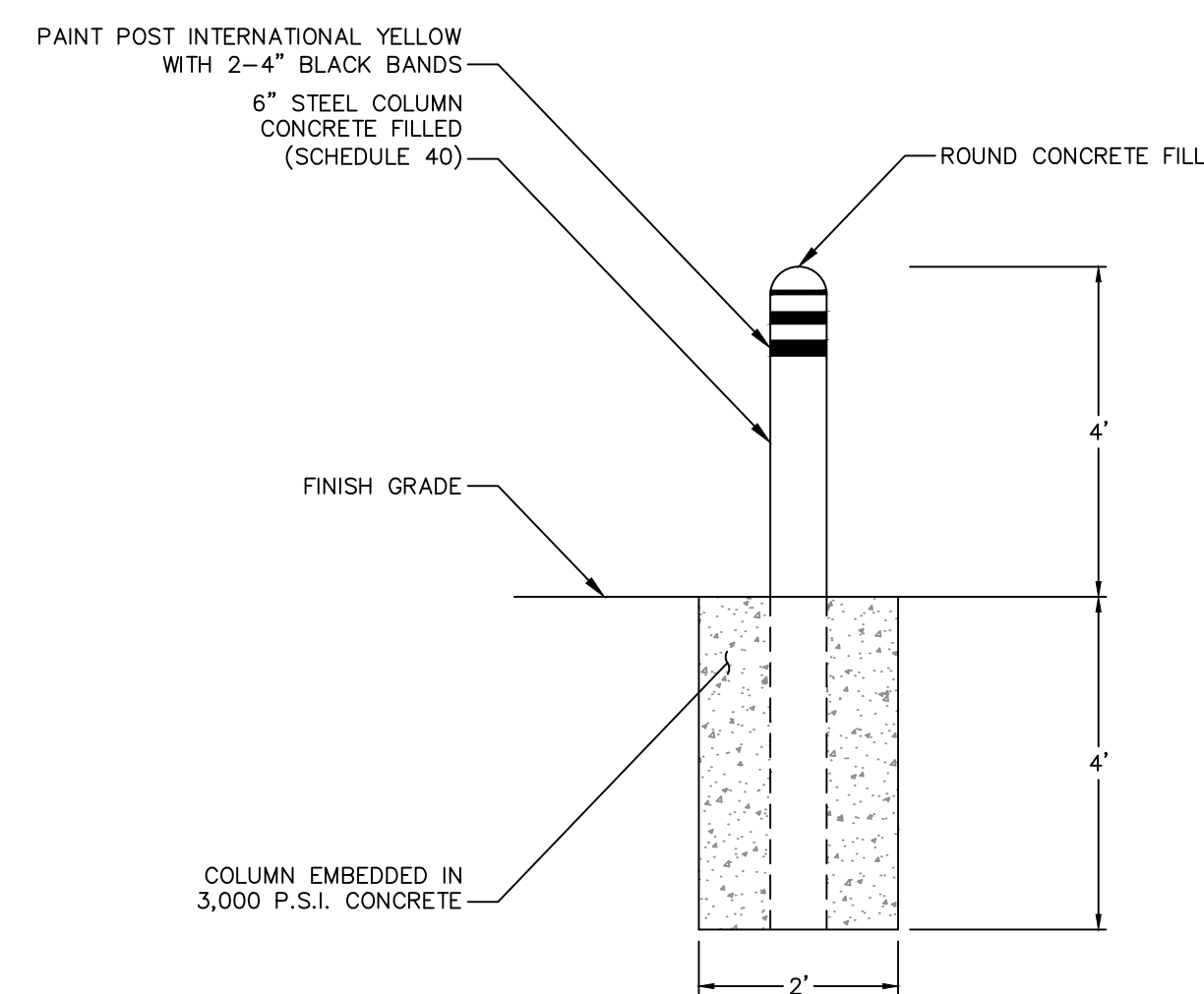
 ATTACH TO C.L. FABRIC WITH CLIPS EVERY 15"
  - END OR CORNER POST
 

FENCE HEIGHT	SQUARE POST	ROUND POST
6 FEET AND LESS	2"	2 1/2"
OVER 6 FEET	2 1/2"	3"
  - 6 GAUGE BOTTOM TENSION WIRE ATTACH TO FABRIC WITH HOG RING AT 24" C.C.
  - TENSION ROD ATTACHED TO END OR CORNER POST
  - 2 30" MIN. LENGTH DRIVE ANCHORS DRIVEN THROUGH FITTINGS AT 90° TO FENCE LINE INTO EARTH AT 45° (TO BE USED IN PLACE OF CONCRETE FOOTING. SEE FOOTING DESIGN NOTE NO. 1)
  - 3,000 P.S.I. CONCRETE FOOTING 36" DEEP WITH 12" DIA. AT END POST AND 10" DIA. AT INTERMEDIATE POST. HOLE CORE IN UNDISTURBED OR COMPACTED SOIL. (SEE NOTE NO. 1)
  - 6 GAUGE TENSION WIRE WHEN TOP RAIL IS NOT USED.
  - FABRIC SELVAGE: UNDER 6 FEET SHALL BE KNUCKLED TOP AND BOTTOM 6 FEET AND OVER SHALL BE KNUCKLED BOTTOM AND TWISTED ON THE TOP RECREATIONAL FENCING, REGARDLESS OF HEIGHT, SHALL BE KNUCKLED TOP AND BOTTOM
  - 9 GAUGE 2" WIRE MESH FABRIC (COMMERCIAL) GALVANIZED COATED.

**NOTE:** SEE PRECAST CONCRETE BLOCK WALL DETAIL FOR RE-ATTACHMENT OF EXISTING FENCE TO CONCRETE BLOCK WALL

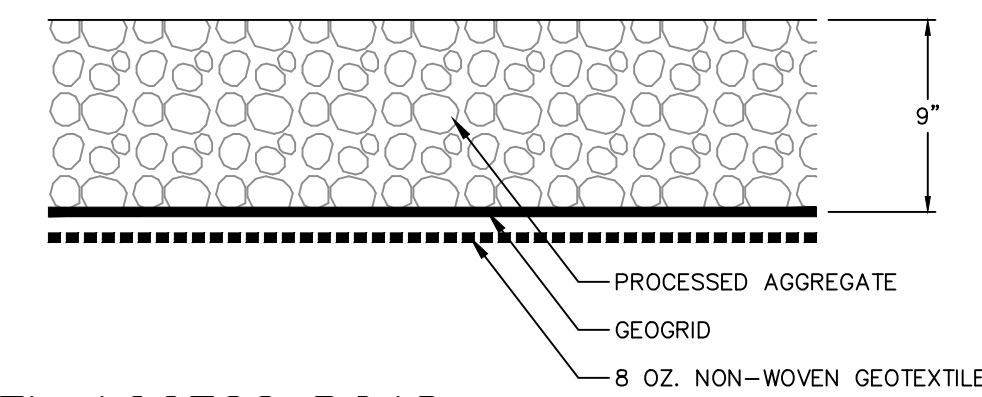
1 CONCRETE CULVERT END  
NOT TO SCALE

2 CHAIN LINK FENCE  
NOT TO SCALE

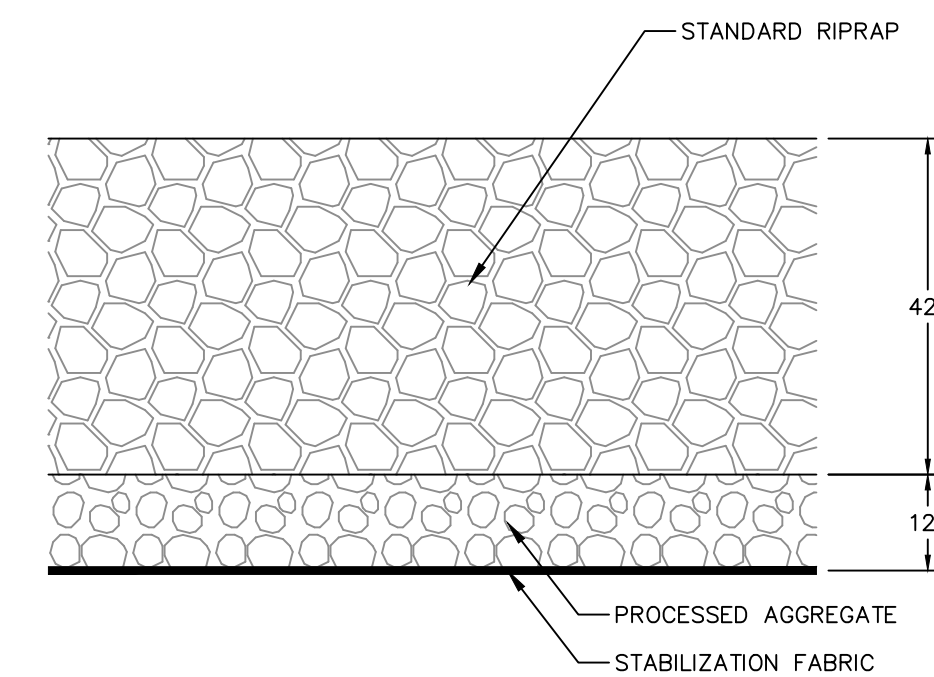


3 LANDFILL LIMIT MARKER  
NOT TO SCALE

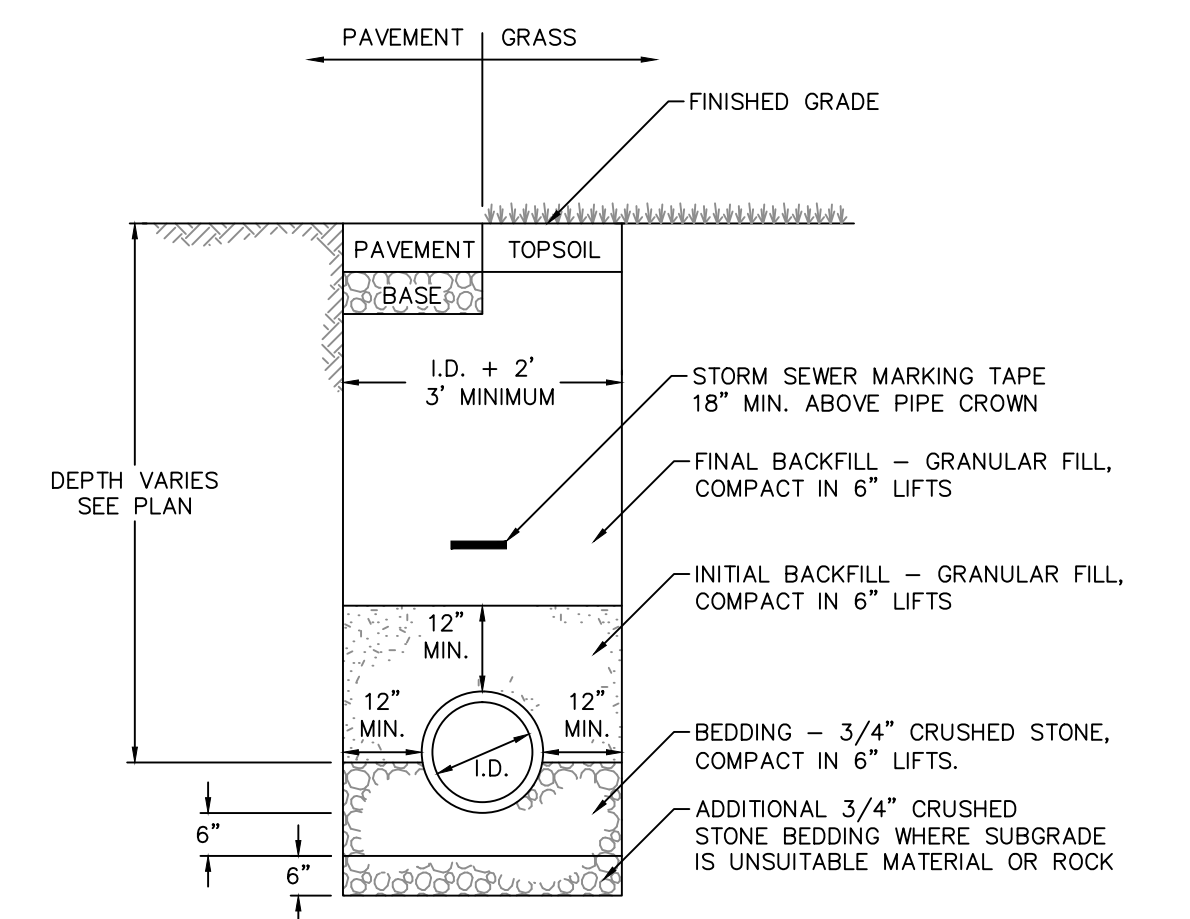
4 BOLLARD  
NOT TO SCALE



5 GRAVEL ACCESS ROAD  
NOT TO SCALE



6 LEVEL SPREADER  
NOT TO SCALE



7 STORM SEWER TRENCH  
NOT TO SCALE

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

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VERT.: \_\_\_\_\_

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CONNECTICUT RESOURCES RECOVERY AUTHORITY

SITE DETAILS

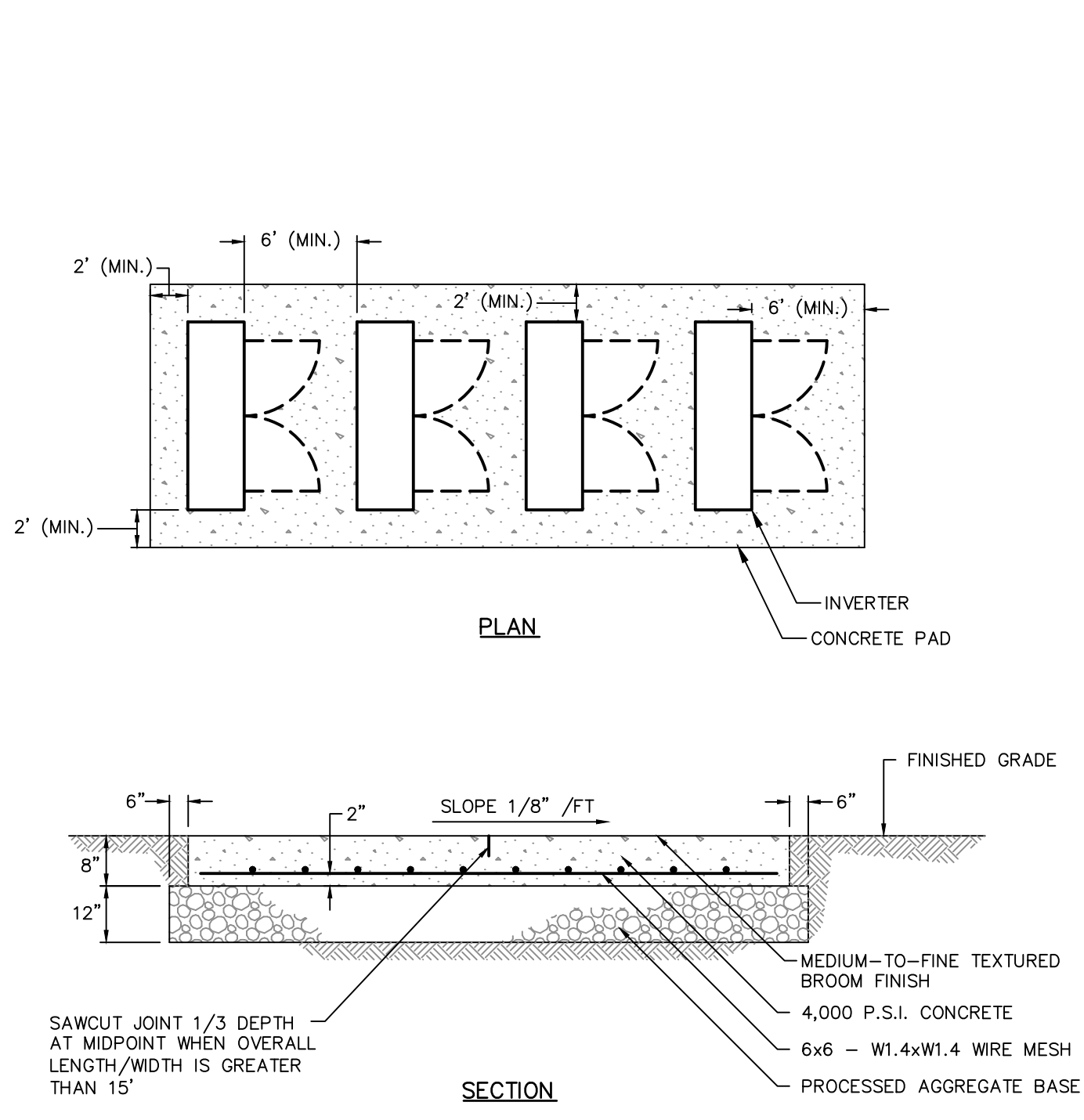
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HARTFORD CONNECTICUT

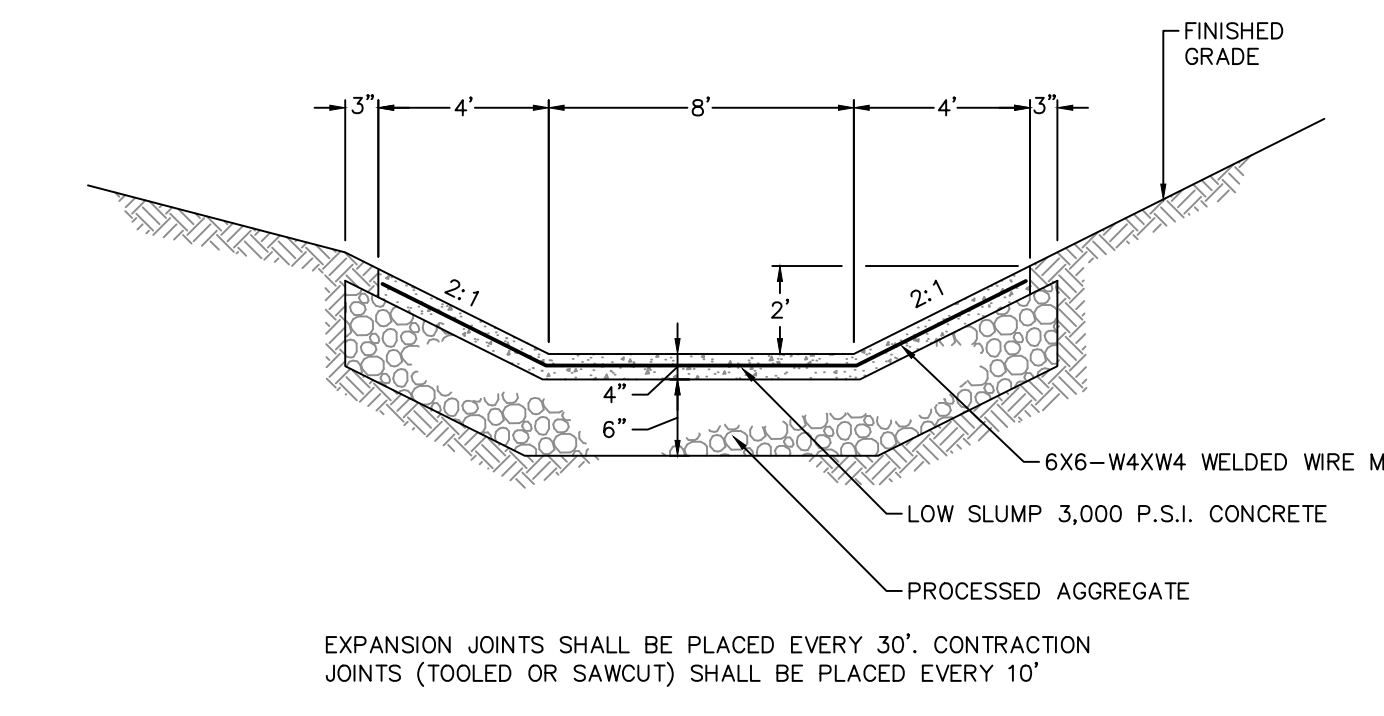
PROJ. No.: 2010 0123.H20  
DATE: 03/05/2013

**C-5.07**

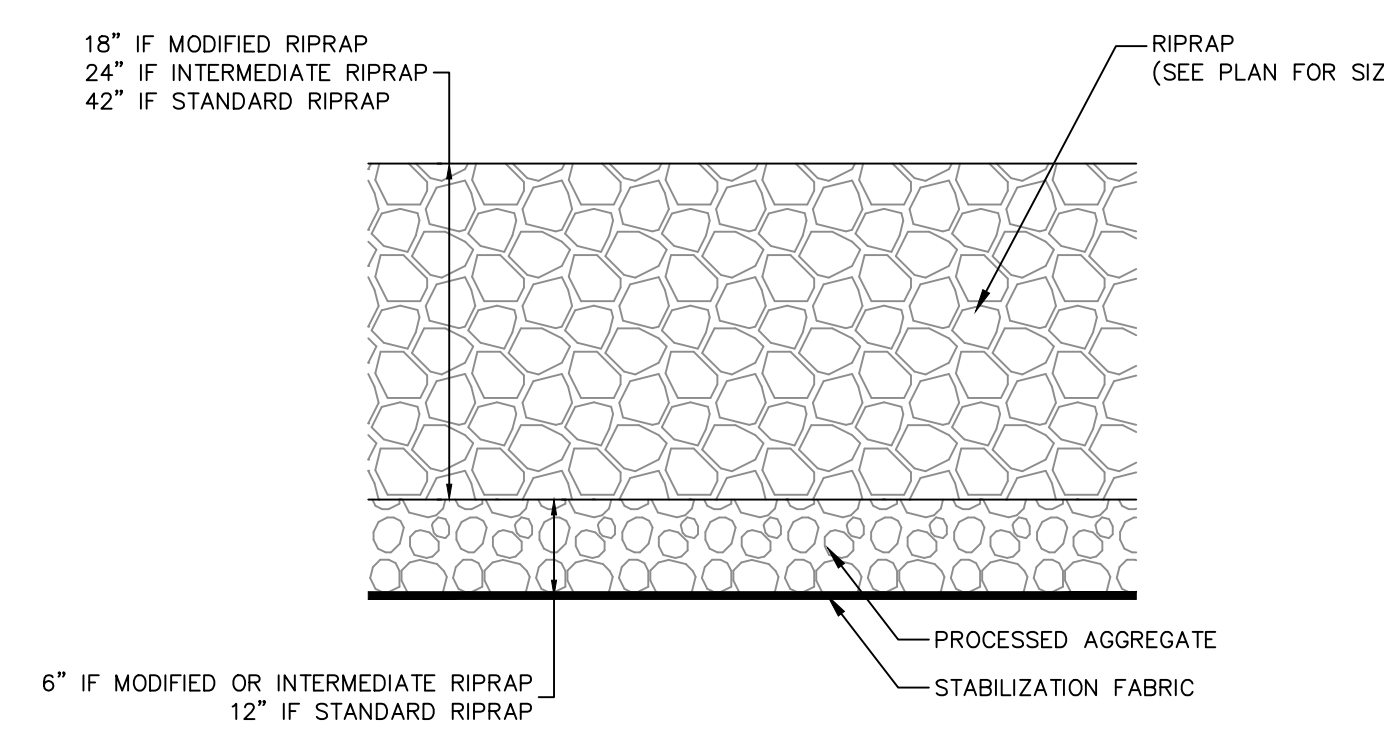
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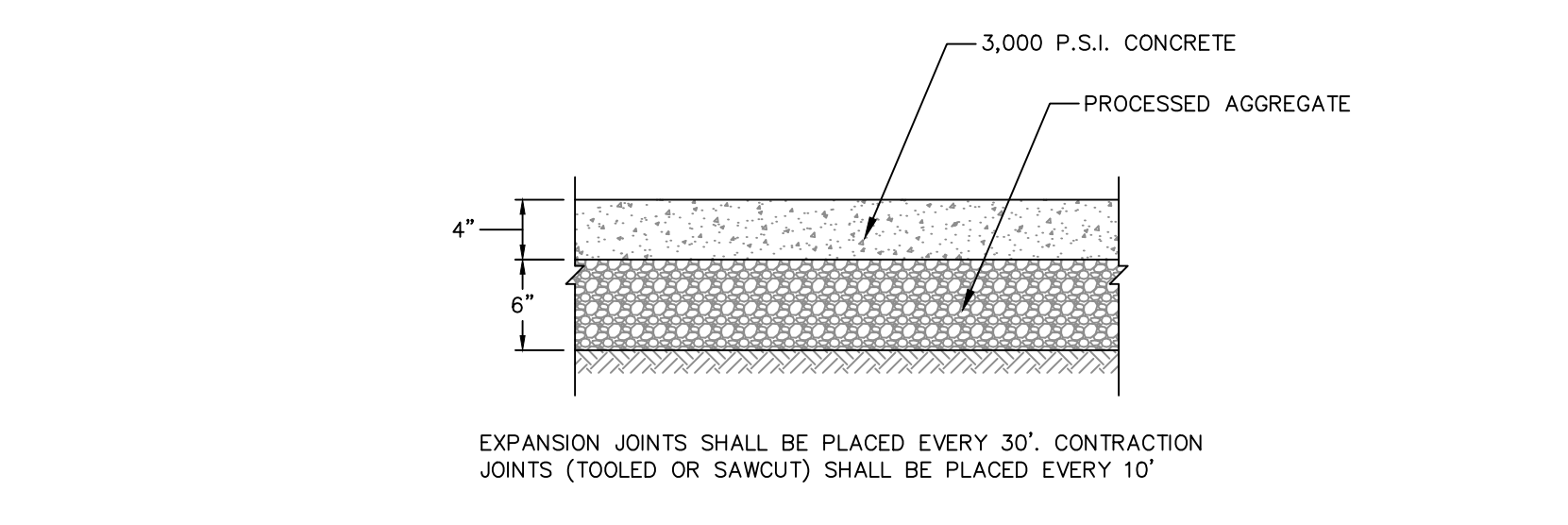
**1 CONCRETE INVERTER PAD**  
NOT TO SCALE



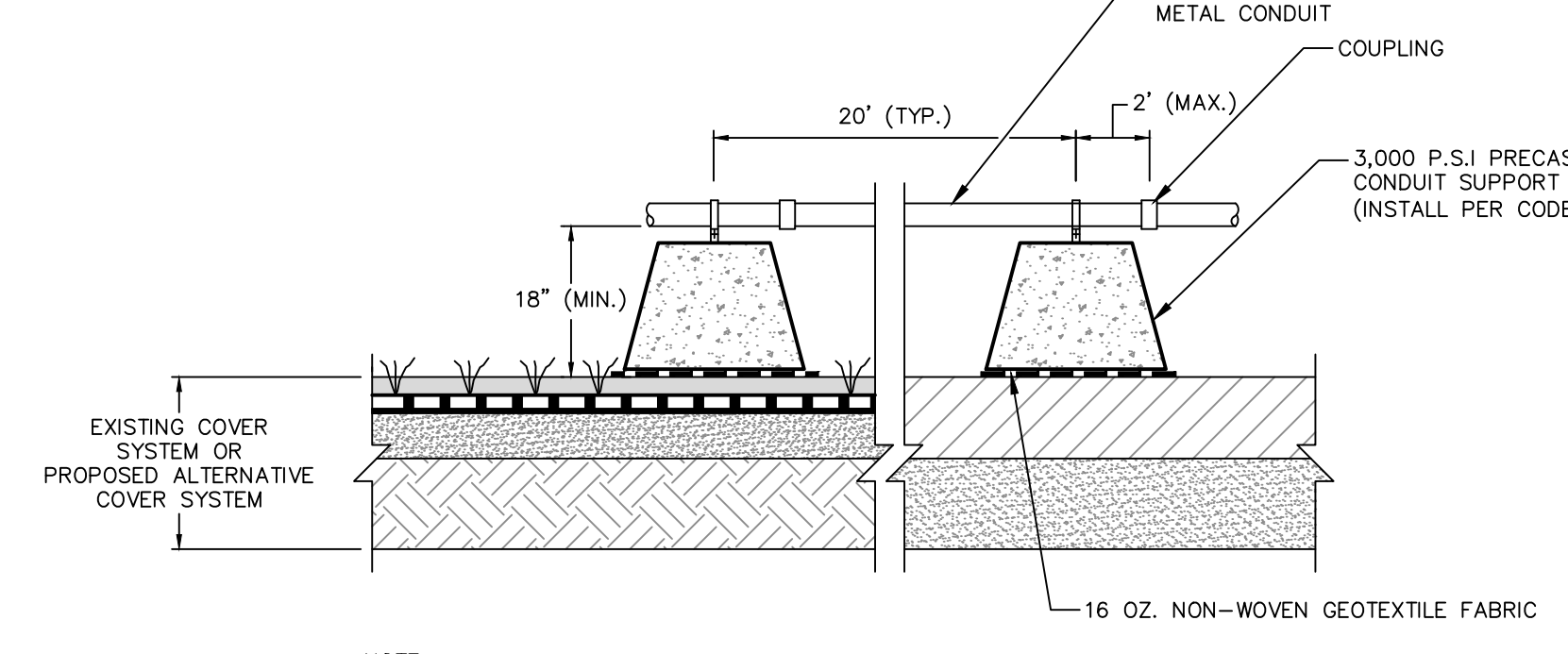
**5 CONCRETE LINED CHANNEL**  
NOT TO SCALE



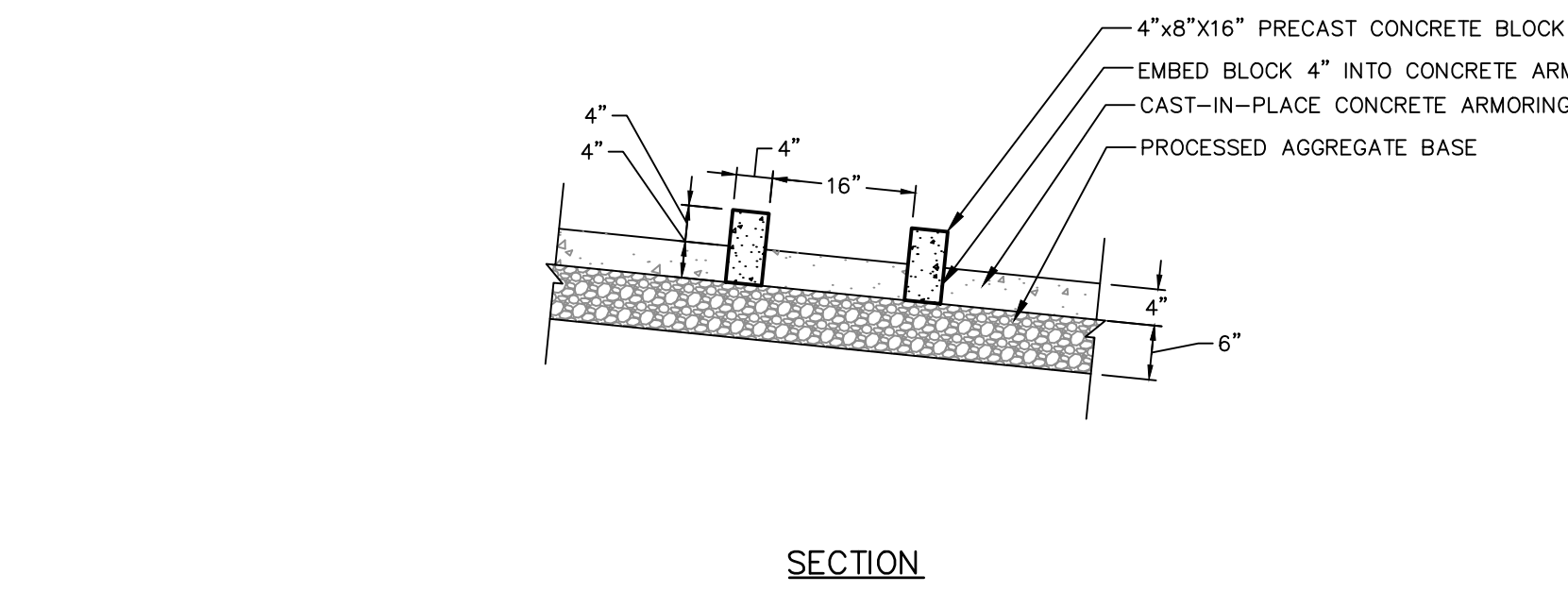
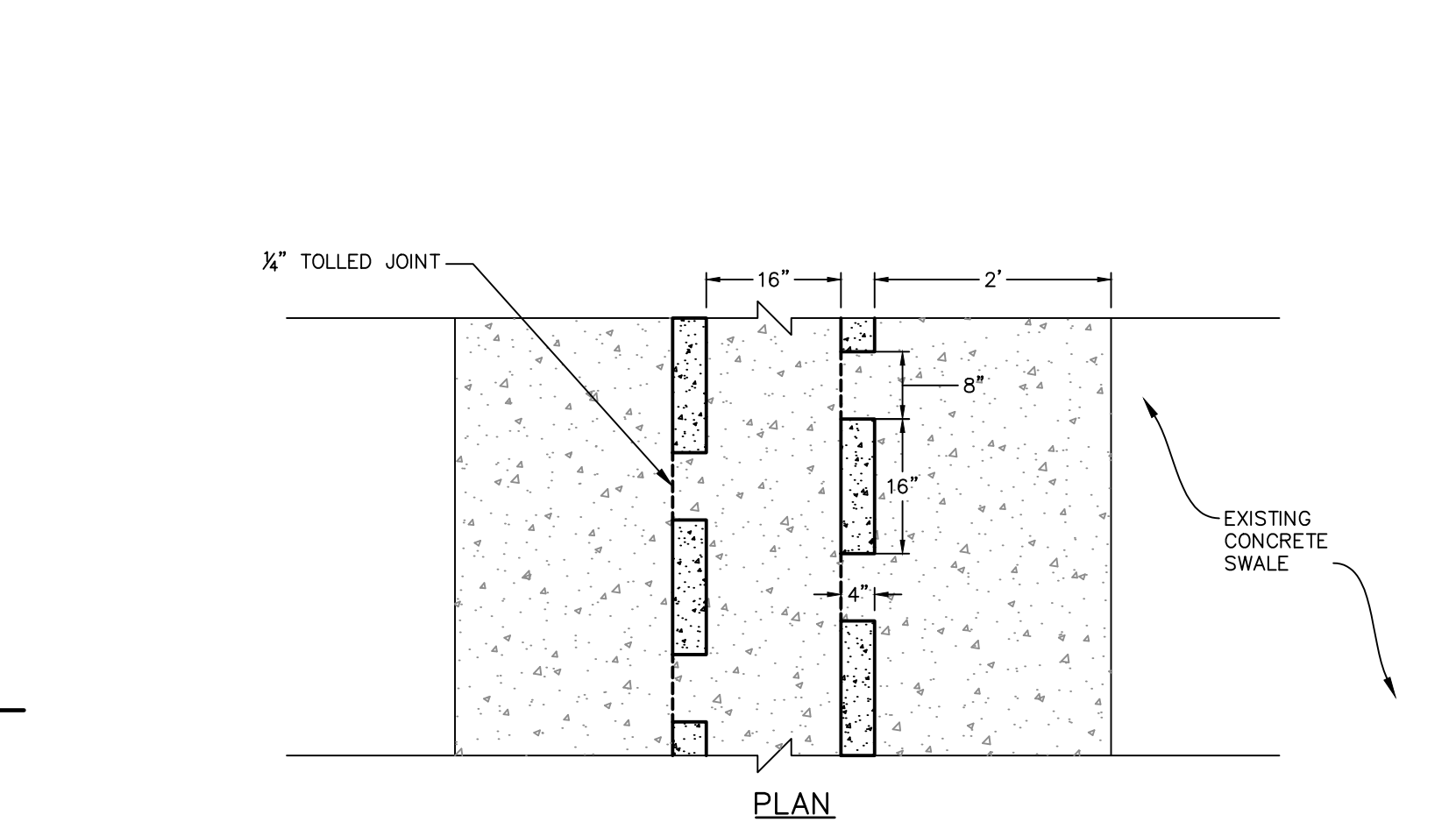
**6 RIPRAP SLOPE PROTECTION**  
NOT TO SCALE



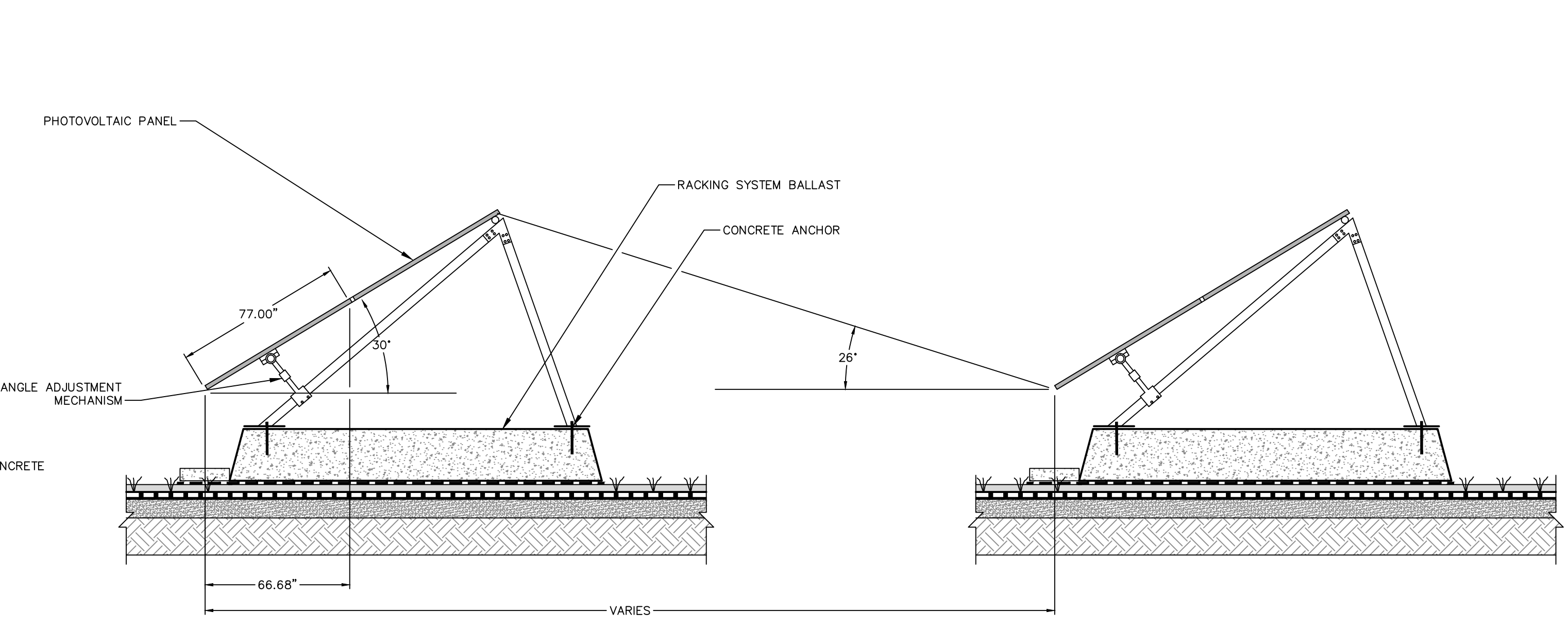
**2 CAST-IN-PLACE CONCRETE ARMORING**  
NOT TO SCALE



**3 ABOVE GROUND CONDUIT SUPPORT**  
NOT TO SCALE

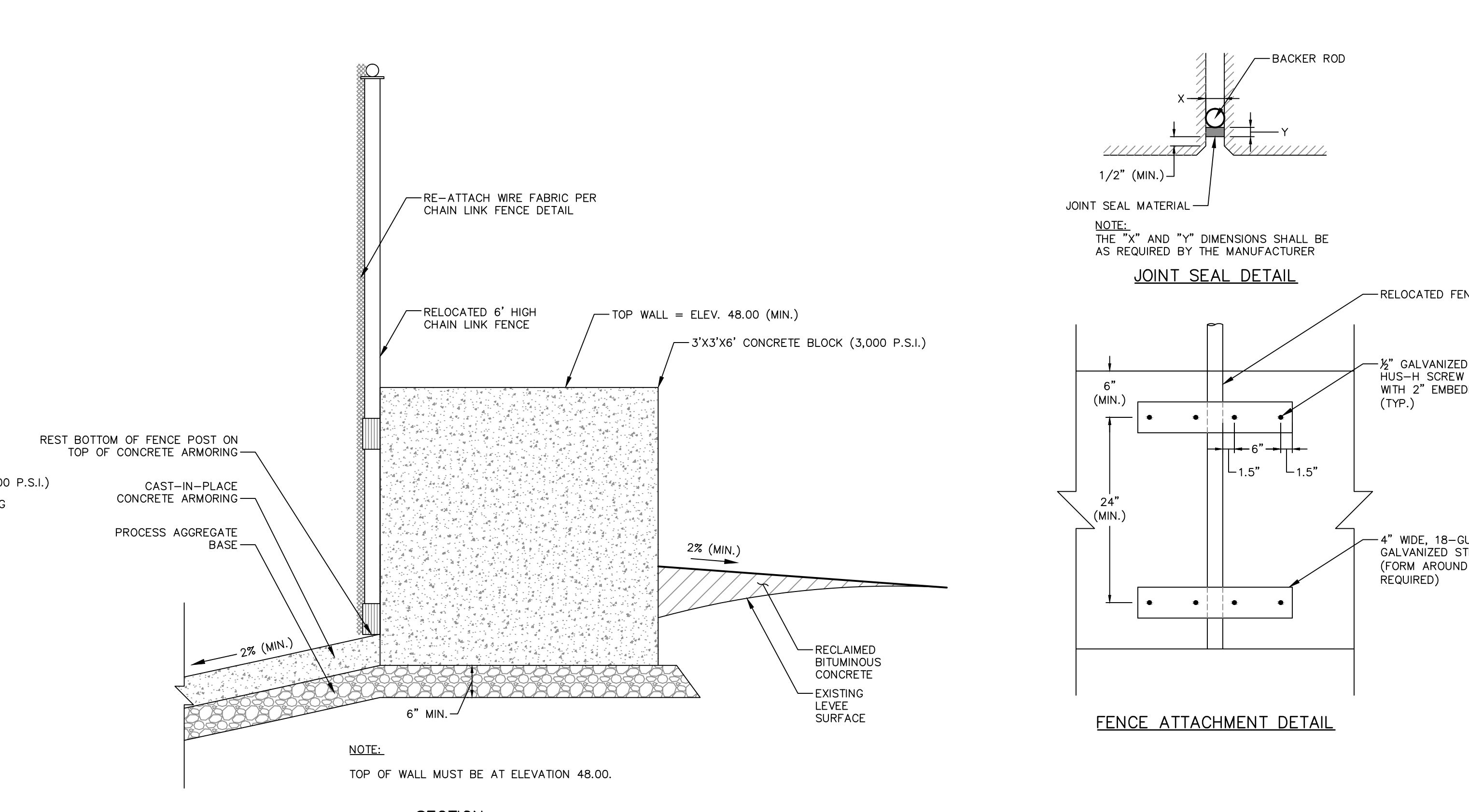


**7 CONCRETE BLOCK STORMWATER DISSIPATION SYSTEM**  
NOT TO SCALE

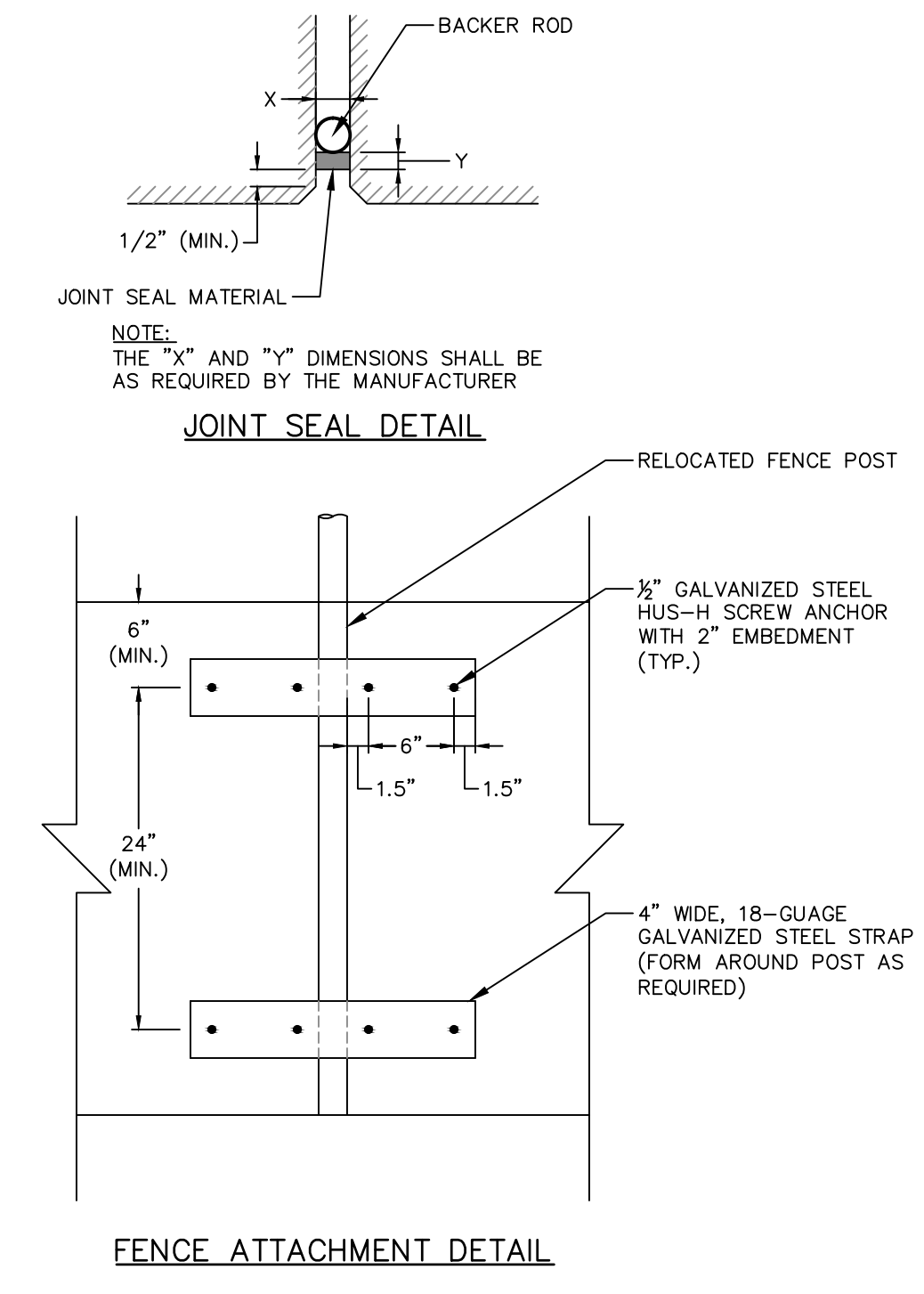


**4 TYPICAL SOLAR PANEL INSTALLATION DETAIL - CLOSURE TURF™ ALTERNATIVE**  
NOT TO SCALE

NOTES:  
 1. SPACING SHALL BE CALCULATED BASED ON SITE TOPOGRAPHY IN ORDER TO PREVENT SHADING OF NORTHERN RACK BY SOUTHERN RACK.  
 2. A SUN ANGLE OF 26° ABOVE THE HORIZON SHALL BE USED TO CALCULATE SPACING.  
 3. RACKING SYSTEM MUST ALLOW ADJUSTMENT OF PANEL ANGLE OVER A RANGE OF 25° TO 35° FROM HORIZONTAL.  
 4. RACKING SYSTEM BALLAST SHALL BE DESIGNED BY A C.T. PROFESSIONAL ENGINEER.  
 5. CONCRETE ANCHORING SHALL BE DESIGNED TO WITH STAND DESIGN WIND LOADS, AND SHALL ALLOW FOR THE ADJUSTMENTS FOR UNEVEN TERRAIN.



**8 PRECAST CONCRETE BLOCK WALL**  
NOT TO SCALE



**FENCE ATTACHMENT DETAIL**

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.				

SEAL	SEAL	
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SCALE:

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VERT.: \_\_\_\_\_

DATUM:

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VERT.: \_\_\_\_\_

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SOLAR PANEL INSTALLATION AND SITE DETAILS

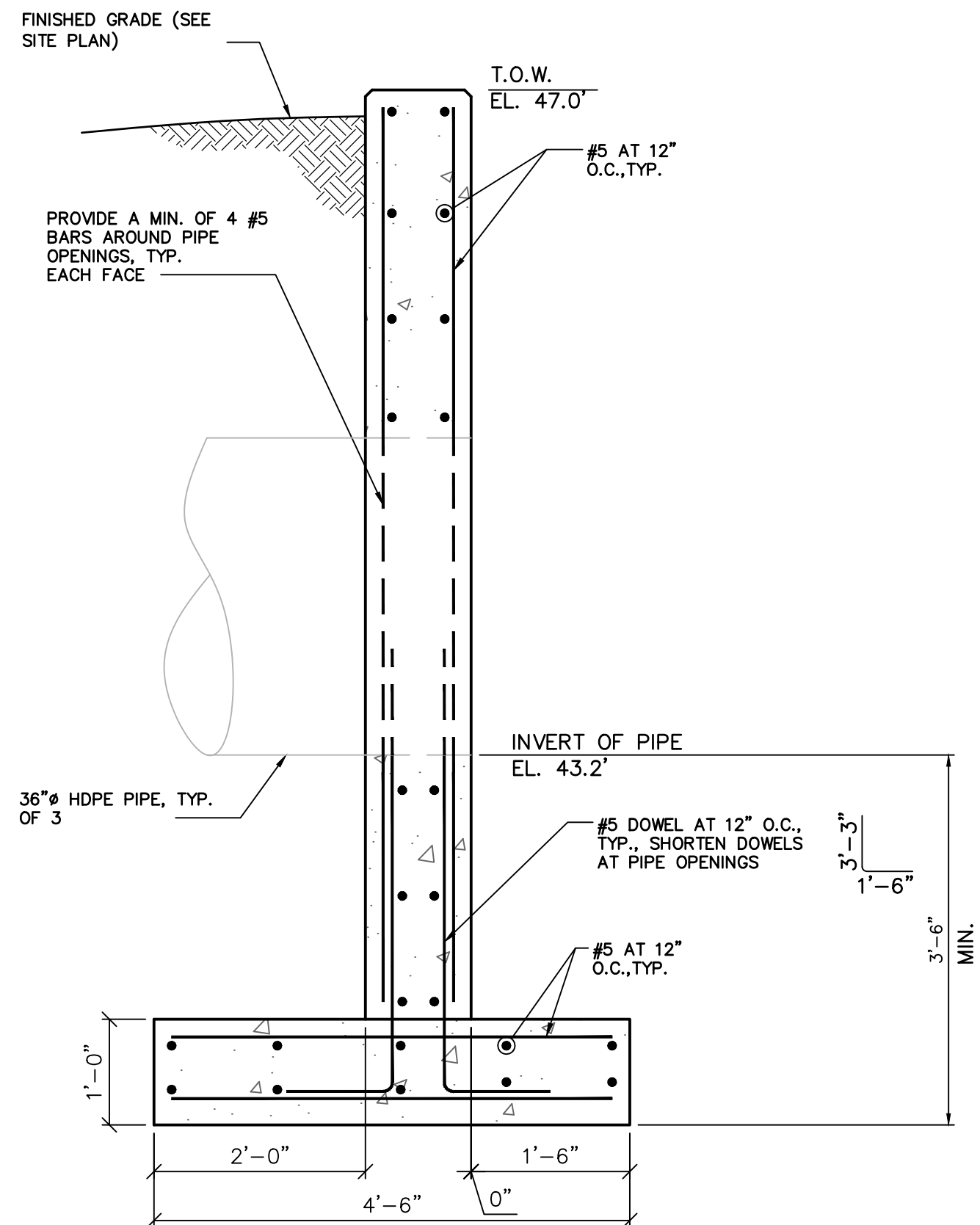
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HARTFORD CONNECTICUT

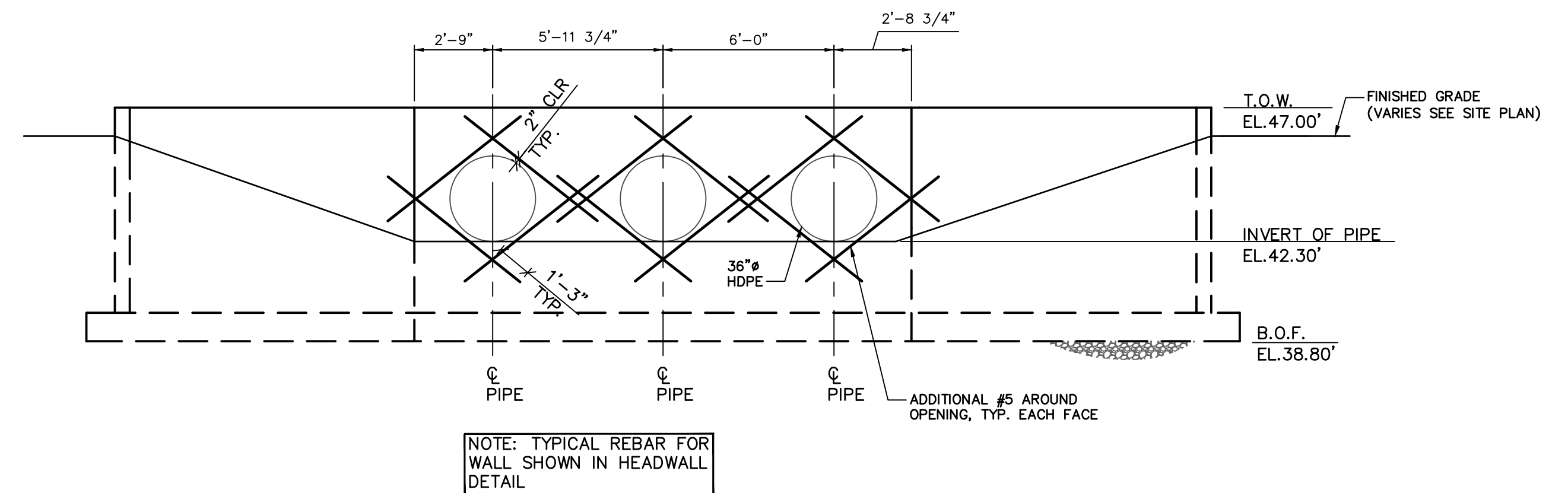
PROJ. No.: 2010 0123.H20  
 DATE: 03/05/2013

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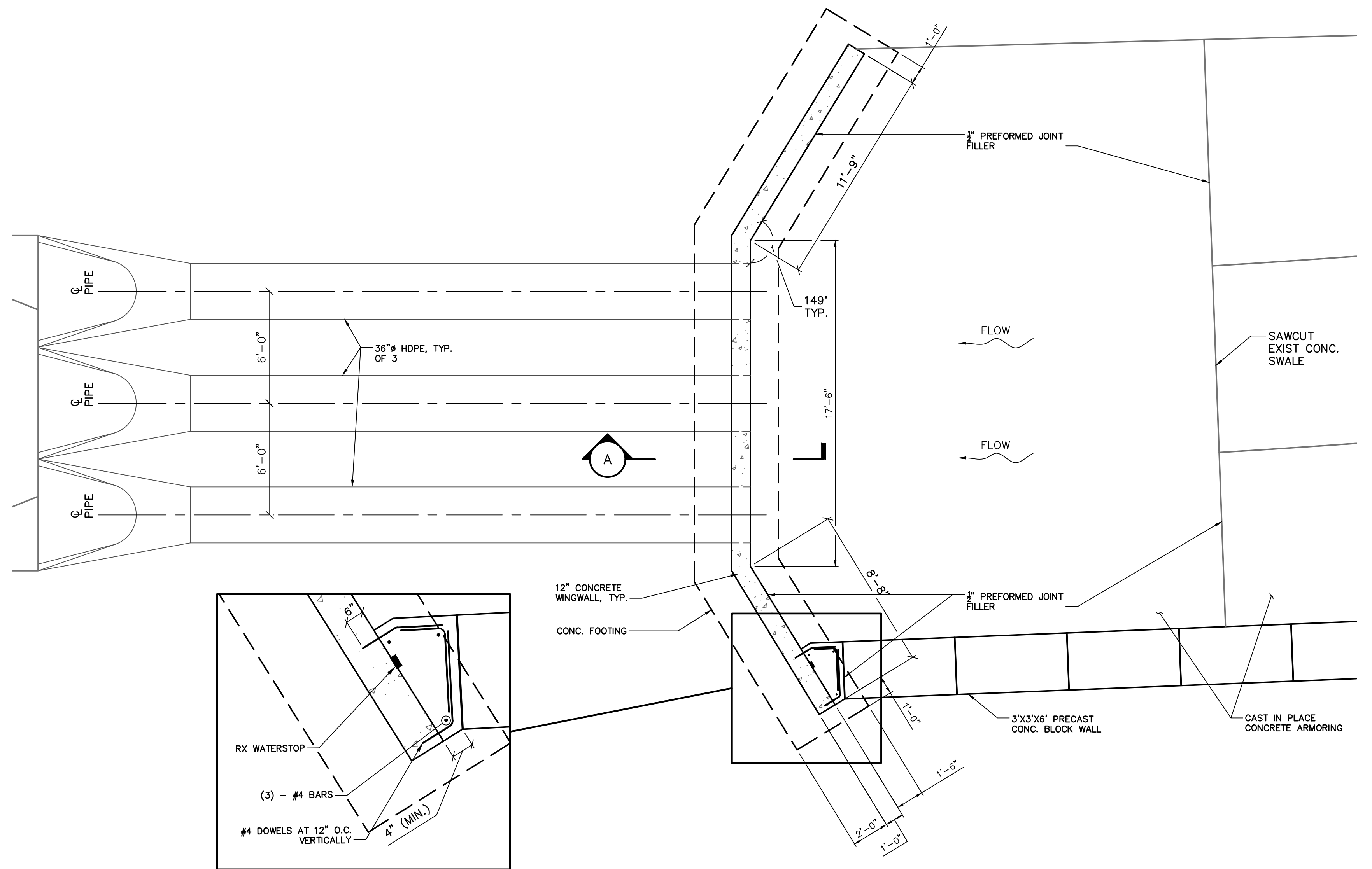




1 SECTION "A" THROUGH HEADWALL  
SCALE: 3/4" = 1'-0"



2 ELEVATION  
SCALE: 1/4" = 1'-0"



3 DRAINAGE OUTFALL IMPROVEMENT PLAN  
SCALE: 1/4" = 1'-0"

CONCRETE NOTES:

- ALL CONCRETE WORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 AND BE DETAILED IN ACCORDANCE WITH ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
- REBARS SHALL HAVE A MINIMUM CONCRETE COVER AS FOLLOWS:  
 CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND.....3 IN.  
 CONCRETE EXPOSED TO THE WEATHER OR IN CONTACT WITH GROUND:  
 FOR BARS #5 AND LARGER.....2 IN.  
 FOR BARS SMALLER THAN #5.....1 1/2 IN.  
 CONCRETE NOT EXPOSED TO THE WEATHER OR THE GROUND:  
 SLABS AND WALLS.....1/4 IN.
- ALL REINFORCING BARS SHALL BE CONTINUOUS AND LAPPED A MINIMUM OF 48 BAR DIAMETERS AT ALL SPLICES, CORNERS, AND INTERSECTIONS UNLESS NOTED OTHERWISE.
- ALL REINFORCEMENT SHALL BE SECURELY TIED IN ITS PROPOSED LOCATION PRIOR TO AND DURING PLACEMENT OF CONCRETE USING APPROVED CHAIRS, SPACERS AND TIE WIRE AS REQUIRED. NO BARS SHALL BE CUT OR OMITTED IN THE FIELD WITHOUT THE APPROVAL OF THE ENGINEER.
- CONCRETE PROTECTION FOR REINFORCEMENT SHALL IN ALL CASES BE AT LEAST EQUAL TO THE DIAMETER OF THE BAR EXCEPT FOR CONCRETE SLABS.
- CONCRETE FOR WALLS, AND FOOTINGS SHALL BE NORMAL WEIGHT CONCRETE AND SHALL DEVELOP A COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS, UNLESS OTHERWISE NOTED. CONCRETE SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 3/4 INCH, A MINIMUM CEMENT CONTENT OF 560 LBS/CU YD., AND A MAXIMUM SLUMP OF 4 INCHES.
- ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 3/8 INCH CHAMFER UNLESS NOTED OTHERWISE.
- ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR-ENTRAINED.
- SIZES AND LOCATIONS OF ALL REQUIRED EMBEDDED ITEMS FOR ALL TRADES SUCH AS ANCHOR BOLTS, PIPING SLEEVES, HOLDOWN ANCHORS, ETC., SHALL BE COORDINATED BY THE CONTRACTOR WITH OTHER TRADES.
- NO HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED IN WALLS, OTHER THAN SHOWN IN DETAILS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LIMITING POURS TO MINIMIZE SHRINKAGE CRACKING. IN GENERAL, WALLS SHALL NOT BE POURED IN CONTINUOUS LENGTHS EXCEEDING 30 FEET WITHOUT CONTRACTION (CONTROL) JOINTS. THE LOCATION AND CONFIGURATION OF JOINTS EXPOSED TO VIEW SHALL BE COORDINATED WITH THE ENGINEER.

FOUNDATION NOTES:

- THE FOUNDATIONS HAVE BEEN DESIGNED TO REST ON 8" OF COMPACTED STRUCTURAL FILL PLACED ON INORGANIC, UNDISTURBED SOIL HAVING A PRESUMPTIVE LOAD BEARING VALUE OF 2,000 PSF EXPECTED TO BE FOUND AT THE SPECIFIED BOTTOM OF FOOTING ELEVATION.
- THE BOTTOM OF EXTERIOR FOOTINGS NOT ON SOLID ROCK SHALL BE AT LEAST 3'-6" BELOW FINISHED GRADE. FOOTINGS ON LEDGE SHALL REST ON BROOM CLEAN SOLID ROCK. IF SLOPE OF ROCK SURFACE EXCEEDS 1 ON 6, FOOTING SHALL BE DOWELED TO LEDGE.
- ALL FILL AND BACKFILL FOR FOOTINGS, AND WALLS SHALL BE STRUCTURAL FILL, CONFORMING TO THE SPECIFICATIONS, WITH THE EXCEPTION OF BACKFILL AGAINST EXTERIOR SIDE OF FROST WALLS WHERE SUITABLE FILL MAY BE USED.
- SIZES AND LOCATIONS OF ALL REQUIRED WALL PENETRATIONS FOR ALL TRADES SUCH AS PIPING SLEEVES SHALL BE COORDINATED BY THE CONTRACTOR WITH OTHER TRADES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, OPERATING AND MAINTAINING ALL EQUIPMENT NECESSARY TO DEWATER SITE EXCAVATIONS.
- ALL BEARING MATERIAL SHALL BE INSPECTED BY A QUALIFIED TECHNICIAN PRIOR TO CONCRETE PLACEMENT. A QUALIFIED TECHNICIAN SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SEAL	SEAL	

SCALE:  
 HORIZ.: VARIES  
 VERT.: VARIES  
 DATUM:  
 HORIZ.:  
 VERT.:  
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CONNECTICUT RESOURCES RECOVERY AUTHORITY  
 CONCRETE HEADWALL DETAILS  
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