

POWER CONSTRUCTION GRAND HOTEL EARTH RETENSION SYSTEM CIVIL SITE PLAN

AGENCIES

PLANNING/ZONING

CITY OF MACKINAC ISLAND
7358 MARKET STREET
PO BOX 455
MACKINAC ISLAND, MI 49757
Contact: KATIE PERENY
Phone: (906) 847-6190

BUILDING CODES

CITY OF MACKINAC ISLAND
7358 MARKET STREET
PO BOX 455
MACKINAC ISLAND, MI 49757
DENNIS DOMBROSKI
Phone: (906) 847-4035

D.P.W.

CITY OF MACKINAC ISLAND
7358 MARKET STREET
PO BOX 515
MACKINAC ISLAND, MI 49757
Contact: ALLEN BURT
Phone: (906) 847-6130

ELECTRIC

CLOVERLAND ELECTRIC COOPERATIVE
2916 WEST M028
DRAFTER, MI 49724
Contact: .
Phone: (800) 562-4953

EGLE

ENVIRONMENT, GREAT LAKES & ENERGY
1504 WEST WASHINGTON STREET
MARQUETTE, MI 49855
Contact: LINDA HANSEN
Phone: (906) 228-4853

CABLE TELEVISION

SPECTRUM
1392 TRADE CENTER DR
TRAVERSE CITY, MI 49686
Contact: .
Phone: .

SOIL AND EROSION

LMAS DISTRICT HEALTH DEPARTMENT
749 HOMBACH STREET
ST IGNACE, MI 49781
Contact: .
Phone: (906) 643-1100

TELEPHONE

ROADS AND STREETS

MACKINAC COUNTY RD COMM
706 N STATE STREET
ST IGNACE, MI 49781
Contact: .
Phone: (906) 643-7333

NATURAL GAS

FIRE CODE

CITY OF MACKINAC ISLAND
7366 MARKET STREET
PO BOX 122
MACKINAC ISLAND, MI 49757
Contact: CHIEF JASON ST ONGE
Phone: (906) 847-8159

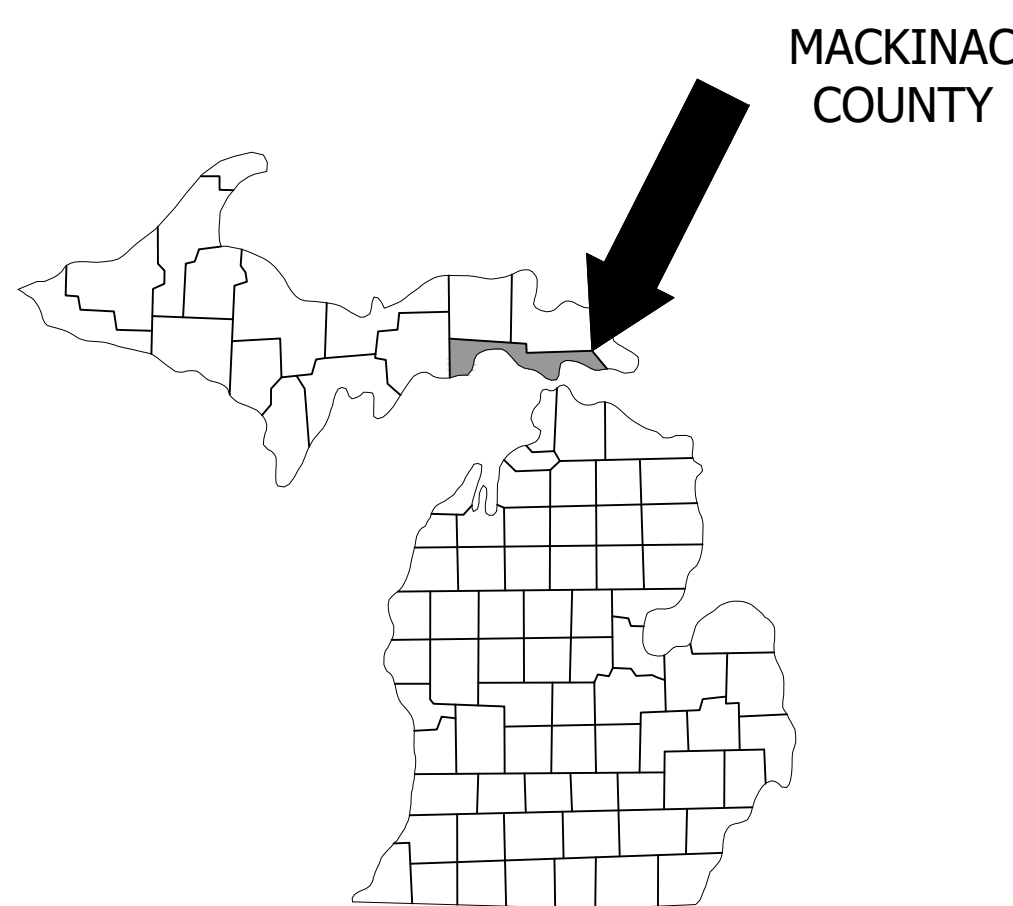
EMERGENCIES

POLICE DEPARTMENT: 9-1-1
FIRE DEPARTMENTS: 9-1-1
AMBULANCE: 9-1-1



LOCATION MAP

SECTION 23, T40N, R3W, MACKINAC COUNTY
NO SCALE



VICINITY MAP

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OWNER/APPLICANT

GRAND HOTEL COMPANY
286 GRAND AVE
MACKINAC ISLAND, MI 49757



Know what's below.
Call before you dig.
(3 WORKING DAYS)

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TRAVERSE CITY, MI PH 231.935.1530
www.machinengineering.net

ON 22x34 SHEET SCALE: FULL (AS NOTED)
ON 11x17 SHEET SCALE: HALF

REV#	DESCRIPTION	DATE
A	REVIEW - 30% DESIGN	04/05/2023
B	REVIEW - 50% DESIGN REVIEW	04/05/2023
C	REVIEW - 75% DESIGN	04/05/2023

DESIGNED BY: [blank] CHECKED BY: [blank] APPROVED BY: [blank] CREATED: 09/04/2023

REVISION: [blank]

DATE ISSUED: 10/18/2023

ISSUE PHASE: REVIEW - 75% DESIGN

PROJECT TITLE:

GRAND HOTEL
EARTH
RETENSION
SYSTEM

CLIENT:
POWER CONSTRUCTION

PROJECT LOCATION:
CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
COVER SHEET

PROJECT NUMBER 23142
SHEET NUMBER C3.0

SPECIFICATIONS

DIVISION 01 – GENERAL NOTES

GENERAL

- ANY DISCREPANCIES OR CONFLICT BETWEEN ANY PART OF THE DESIGN DOCUMENTS, OR BETWEEN THE DESIGN DOCUMENTS AND APPLICABLE CODES, LAWS, OR ORDINANCES, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER, AND THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.
- TYPICAL DETAILS AND OTHER SECTIONS / DETAILS APPLY TO CONDITIONS THAT ARE SIMILAR TO THE CONDITIONS DESCRIBED IN THE SECTIONS / DETAILS, EVEN IF THEY ARE NOT SPECIFICALLY REFERENCED ON THE PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
- NO CHANGE IN SIZE OF DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT / ENGINEER.
- THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND / OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND / OR SEQUENCES. PERMANENT BRACING IS TO BE COORDINATED WITH THE EXISTING BUILDING AND ITS COMPONENTS.
- DO NOT SCALE THESE DRAWINGS. USE DIMENSIONS. DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS AND PRE-ENGINEERED DRAWINGS.
- THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR SUCH DEVIATION BY THE ENGINEER'S APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, ETC., UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ENGINEER OF SUCH DEVIATION AT THE TIME OF SUBMISSION, AND THE ENGINEER HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.
- CONSTRUCTION SHALL COMPLY FULLY WITH THE APPLICABLE PROVISIONS OF OSHA AND THE LOCAL GOVERNING CODES, CURRENT EDITION, AND ALL REQUIREMENTS SPECIFIED IN THE CODES SHALL BE ADHERED TO AS IF THEY WERE CALLED FOR OR SHOWN ON THE DRAWINGS. THIS SHALL NOT BE CONSTRUED TO MEAN THAT REQUIREMENTS SET FORTH ON THE DRAWING MAY BE MODIFIED BECAUSE THEY ARE MORE STRINGENT THAN THE CODE REQUIREMENTS OR BECAUSE THEY ARE NOT SPECIFICALLY REQUIRED BY CODE.
- WORK CONSTRUCTED PER THESE DRAWINGS SHALL BE INSPECTED BY AN INDEPENDENT TESTING AGENCY RETAINED TO ENSURE COMPLIANCE WITH THE REQUIREMENTS SHOWN ON THE DRAWINGS. SPECIAL INSPECTIONS REQUIRED BY THE GOVERNING BUILDING CODE, LOCAL BUILDING DEPARTMENT AND THE CONTRACT DOCUMENTS SHALL BE PERFORMED BY A QUALIFIED SPECIAL INSPECTOR. PROJECT SITE VISITS BY THE STRUCTURAL ENGINEER DOES NOT CONSTITUTE OR REPLACE INSPECTION.
- PRIOR TO CONSTRUCTION, THERE SHALL BE A COORDINATION MEETING BETWEEN THE OWNER AND CONTRACTOR ON SITE.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS AND COORDINATING MECHANICAL AND ELECTRICAL REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.

DIVISION 01 – GENERAL NOTES

- THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE REQUIREMENTS OF THE PLANS.
- TOPOGRAPHIC INFORMATION BY ENGINEER OF RECORD AND IS SHOWN FOR REFERENCE ONLY.
- WALLS HAVE BEEN DESIGNED FOR SINGLE STAGE CONSTRUCTION.
- PLAN DOES NOT TAKE INTO ACCOUNT ANY WORK NOT SPECIFICALLY SHOWN ON THIS PLAN THAT IS OUTSIDE THE SCOPE OF THE EARTH RETENTION.
- SURCHARGE LOAD WAS NOT INCLUDED IN THE DESIGN EITHER ABOVE OR BELOW THE WALL.

DIVISION 02 – SITE WORK

GENERAL

- SOILS INFORMATION PROVIDED BY THE CLIENT FROM BORINGS COMPLETED BY SOILS & STRUCTURES DATED 09/15/22 (JN#2023.1550).
- OVERALL STABILITY OF SEGMENTAL BLOCK WALLS WAS CALCULATED USING THE MINIMUM FACTORS OF SAFETY AGAINST FAILURE AS REQUIRED PER THE SPECIAL PROVISION:
 - OVERTURNING: 1.5
 - SLIDING RESISTANCE: 1.5
 - BEARING CAPACITY: 2.0
 - SLOPE STABILITY: 1.33
- CONCRETE BLOCK WALLS WERE DESIGNED USING REDI-ROCK INTERNATIONAL'S PROPRIETARY SOFTWARE.
- CONTRACTOR SHALL COMPLY WITH THE INSTALLATION MANUAL PRODUCED BY REDI-ROCK INTERNATIONAL FOR THE WALL TYPE PROPOSED. THESE DRAWINGS SHALL BE USED IN CONJUNCTION WITH THIS MANUAL.

MODULAR BLOCK RETAINING WALL

- CONTRACTOR SHALL EXERCISE CAUTION WHEN PLACING AND GRADING EMBANKMENT. SURCHARGE LOADS WERE INCLUDED IN LONG TERM STABILITY CALCULATION FOR RETAINING WALLS.
- DESIGN SURCHARGE LOADS: NOT INCLUDED IN THE DESIGN.
- PROTECT ALL COMPONENTS FROM DAMAGE AND INSPECT EACH UNIT FOR DAMAGE PRIOR TO INSTALLATION.
- ALL UNITS ARE TO BE MADE FROM REDI-MIX CONCRETE IN ACCORDANCE WITH ASTM C94 WITH A MINIMUM CONCRETE COMPRESSIVE STRENGTH $F_c = 4,000\text{PSI}$ AT 28-DAYS.
- EXPOSED FACE SHALL BE FINISHED WITH A CONSISTENT ARCHITECTURAL TEXTURE AS DETERMINED IN THE SUBMITTAL STAGE. OBTAIN APPROVALS FROM THE PROJECT ENGINEER PRIOR TO INSTALLATION PER THE REQUIREMENTS OF THE SPECIAL PROVISION.
- ALLOWABLE SOIL BEARING CAPACITY OF FOUNDATION ASSUMED 2,500 PSF PER GEOTECH.
- THE FOLLOWING SOILS SHALL BE PROVIDED FOR THE SPECIFIED LOCATIONS AND COMPACTED TO THE FOLLOWING MINIMUM PERCENTAGES OF MAXIMUM DRY DENSITIES:
 - NATIVE SOILS UNDER LEVELING PAD 95%
 - 6A CRUSHED STONE LEVELING PAD 95%
 - 6A CRUSHED STONE STRUCTURAL BACKFILL 95%
 - CLASS II STRUCTURAL SAND BACKFILL 95%
- FREE DRAINAGE STONE SHALL BE PROVIDED BEHIND WALL WHERE SHOWN IN THE DETAILS. DRAINAGE STONE SHALL BE PROVIDED FROM BASE OF LEVELING PAD PER DETAILS. PROVIDE NON-WOVEN GEOTEXTILE FILTER FABRIC PER DETAILS.
- STRUCTURAL SOIL BACKFILL SHALL BE AS SPECIFIED IN THE DETAILS WITH A MINIMUM ANGLE OF INTERNAL FRICTION (ϕ):
 - CRUSHED STONE BACKFILL 35°
- USE NATIVE SOILS FOR BACKFILL MEETING OR EXCEEDING MEDIUM SAND.
- LEVELING PAD SHALL EXTEND IN AN EQUAL MANNER EITHER SIDE OF BOTTOM BLOCK WITH A MINIMUM COMPACTED THICKNESS OF 12" U.N.O.
- ALL BLOCKS SHALL BE PLACED WITH THE FRONT SIDE EDGES IN CONTACT WITH EACH OTHER.
- BASE BLOCKS SHALL BE PLACED TO THE GRADES SPECIFIED IN THE PLANS, LEVEL, AND IN FULL CONTACT WITH THE LEVELING PAD.
- FILL ALL INTERIOR SPACES AND SPACES BETWEEN THE BLOCKS WITH FREE DRAINAGE MATERIAL AS SPECIFIED IN THESE PLANS.

SPECIFICATIONS (CONTINUED)

- MAXIMUM LIFTS FOR STRUCTURAL BACKFILL SHALL BE 9".
- ALLOWABLE TOLERANCES SHALL BE AS FOLLOWS:
 - VERTICAL WALL 2 DEGREES
 - HORIZONTAL WALL 1 IN PER 10 FEET
- USE HALF-BLOCKS AT WALL ENDS WHERE WALL IS EXPOSED.
- WALL REINFORCEMENT SHALL BE MIRACRID 8XT OR EQUAL GEGRID. STONES SHALL BE FULLY ENGAGED WITH GEGRID PRIOR TO BACKFILL WITH GRID SLACK REMOVED.

DIVISION 03 – CONCRETE

- ALL CAST IN PLACE CONCRETE SHALL BE NORMAL WEIGHT AND CONFORM TO ACI SPECIFICATIONS, BE AIR ENTRAINED 5% ±1%, AND SHALL ATTAIN A 28-DAY COMPRESSIVE STRENGTH AS FOLLOWS:

FOOTINGS, WALLS AND PIERS:	$F_c = 4,000\text{ PSI}$
SLAB ON GRADE AND EXTERIOR CONCRETE:	$F_c = 4,000\text{ PSI}$
CONCRETE ON COMPOSITE DECK:	$F_c = 4,000\text{ PSI}$
- REINFORCEMENT FOR CONCRETE SHALL CONFORM TO THE FOLLOWING:
 - DEFORMED BARS SHALL BE ASTM A615 GRADE 60.
 - WELED WIRE FABRIC SHALL BE ASTM A185 AND MINIMUM END AND SIDE LAP OF 10". FLAT SHEETS ONLY.
- ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING STANDARDS:
 - 'BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)';
 - 'SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING (ACI 301)';
 - 'DETAILS AND DETAILING OF CONCRETE REINFORCEMENT (ACI 315)';
- BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC., BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" CONCRETE.
- EXPOSED EDGES OF CONCRETE SHALL HAVE A 3/4" CHAMFER.
- REINFORCING SHALL BE LOCATED AND SUPPORTED PRIOR TO PLACING ANY CONCRETE. BARS AND W/MF SHALL BE SECURELY HELD IN POSITION. W/MF SHALL BE SUPPORTED ON CHAIRS AT 2'-0" CENTERS TO ADEQUATELY SUPPORT THE MESH, PLACEMENT AND SPACING MAY BE INCREASED BY OWNER. ANY DISPLACED REINFORCING STEEL SHALL BE REPOSITIONED TO ITS PROPER LOCATION PRIOR TO CONCRETE PLACEMENT. INSERTING DOWELS INTO WET CONCRETE IS NOT PERMITTED.
- CONVEY THE CONCRETE FROM THE MIXER AND PLACE SO THAT THERE SHALL BE NO SEGREGATION OF THE INGREDIENTS. DEPOSIT THE CONCRETE AS NEARLY AS POSSIBLE IN ITS FINAL POSITION TO AVOID RE-HANDLING. DO NOT DEPOSIT CONCRETE WHICH HAS ATTAINED INITIAL SET OR HAS CONTAINED ITS WATER CONTENT FOR OVER 1 1/2 HOURS.
- CONCRETE SHALL BE IMMEDIATELY VIBRATED, SPADED, OR OTHERWISE AGITATED THOROUGHLY IN A MANNER APPROVED BY THE ENGINEER TO REMOVE ALL AIR POCKETS, WORK MIXTURE INTO CORNERS, AROUND REINFORCEMENTS AND INSERTS, AND TO PREVENT FORMATION OF VOIDS. TAPPING OR EXTERNAL VIBRATION OF FORMS SHALL NOT BE PERMITTED.
- BEFORE DEPOSITING CONCRETE ON OR AGAINST CONCRETE THAT HAS SET, THOROUGHLY ROUGHEN AND CLEAN EXISTING SURFACES OF LAITANCE, FOREIGN MATTER, LOOSE PARTICLES, ETC. SLUSH EXISTING SURFACES WITH NEAT CEMENT GROUT IMMEDIATELY BEFORE PLACING NEW CONCRETE.
- DO NOT ALLOW LOADS ON SLAB UNTIL CONCRETE HAS ATTAINED A MINIMUM OF 75% OF THE 28-DAY SPECIFIED STRENGTH.
- GROUT SHALL BE NON-SHRINK AND NON-METALLIC, AND SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS. EQUAL TO MASTER FLOW 928 BY MASTER BUILDERS, INC.
- SLABS CAST ON GRADE SHALL BE 4" THICK CONCRETE REINFORCED WITH 6X6, W1.4XW1.4 W/MF IN TOP 1/2 OF SLAB, UNLESS NOTED OTHERWISE.
- FIBER REINFORCEMENT SHALL COMPLY WITH ASTM CL116. FIBERS SHALL BE DESIGNED AND ENGINEERED SPECIFICALLY FOR CONCRETE REINFORCEMENT AND HAVE LONG-TERM RESISTANCE TO DETERIORATION WHEN EXPOSED TO MOISTURE AND ALKALIS. ADD FIBER REINFORCEMENT TO MIX AT A RATE OF 1.5 POUNDS PER CUBIC YARD, OR AS RECOMMENDED BY MANUFACTURER FOR SPECIFIC PROJECT CONDITIONS.
- USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
- CONTRACTOR SHALL PREPARE AND SUBMIT REINFORCEMENT SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. THE SHOP DRAWINGS SHALL CLEARLY SHOW REINFORCEMENT LENGTHS AND BENDS, LOCATIONS OF BARS, METHODS OF SUPPORT, DETAILS OF PLACEMENT AND COORDINATION WITH FORMWORK, EMBEDMENTS, CONCRETE VIBRATION, AND CONSTRUCTION JOINTS. THE DRAWINGS SHALL ALSO INDICATE OPENINGS, SLEEVES, CURBS, AND CONCRETE DIMENSIONS IN ACCORDANCE WITH ACI 315. PROVIDE AT MINIMUM WALL COLUMN AND BEAM ELEVATIONS; WALL, COLUMN AND BEAM SECTIONS, MATERIAL SCHEDULES, BAR LAP SCHEDULES, AND LOCATIONS.
- CONTRACTOR SHALL PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE; SPLICE ONLY AS SHOWN OR APPROVED; STAGGER SPLICES WHERE POSSIBLE; USE SPLICE LENGTHS AS NOTED. DOWELS SHALL MATCH THE SIZE AND SPACING OF THE SPECIFIED REINFORCEMENT AND SHALL BE LAPPED WITH TENSION SPLICES, UNLESS NOTED OTHERWISE.
- MINIMUM LAP SPLICE SHALL BE CLASS B PER ACI 318. LOCATION OF LAP SPLICES SHALL BE AS INDICATED ON CONSTRUCTION DOCUMENTS AND / OR AS SHOWN ON THE APPROVED REINFORCING STEEL SHOP DRAWINGS.
- APPROVED REBAR COUPLERS MAY BE USED TO AID PLACEMENT OF DOWELS THROUGH FORMS. MECHANICAL SPLICES SHALL DEVELOP 125% OF THE TENSILE STRENGTH OF THE REBAR.
- REINFORCING STEEL SHALL NOT BE CUT, BENT OR STRAIGHTENED IN THE FIELD UNLESS APPROVED BY THE STRUCTURAL ENGINEER OR AS INDICATED ON THE DRAWINGS.
- HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED ONLY WHERE INDICATED. THE LOCATION OF VERTICAL CONSTRUCTION JOINTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. CONSTRUCTION JOINTS SHALL BE THOROUGHLY MECHANICALLY ROUGHENED, CLEANED, AND BONDING AGENT APPLIED BEFORE PLACEMENT OF ADJOINING CONCRETE.
- THE USE OF CHLORIDES SUCH AS DEICING SALTS IS PROHIBITED FOR MELTING ICE PRIOR TO PLACEMENT OF CONCRETE.
- REINFORCING PROTECTION FOR CAST-IN-PLACE CONCRETE AS PER ACI 318, UNLESS NOTED OTHERWISE.
 - CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:
 - ALL REINFORCING 3"
 - FORMED SURFACES EXPOSED TO EARTH OR WEATHER:
 - NO. 6 THRU NO. 18 BARS 2"
 - NO. 5 BAR, W32 OR D31 WIRE AND SMALLER 1 1/2"
 - SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
 - BEAMS, COLUMNS, PRIMARY REINFORCEMENT, TIES, STIRRUPS, OR SPIRALS 1 1/2"
 - SLABS, WALLS, AND JOISTS
 - NO. 14 AND NO. 18 BARS 1 1/2"
 - NO. 11 BAR AND SMALLER 1 1/2"
- HORIZONTAL REINFORCING BARS SHALL BE LAPPED AROUND CORNERS OF INTERSECTING FOOTINGS. STANDARD ACI HOOKS AND BENDS SHALL BE USED.
- DE-BONDING GREASE USED WITH ANCHORS: VANTAGE K-218 PT GREASE OR EQUAL.

SPECIFICATIONS (CONTINUED)

DIVISION 31 – EARTHWORK

SITE CLEARING

- CONTACT MISS DIG AT 8-1-1 A MINIMUM OF 72 HOURS PRIOR TO COMMENCING WORK.
- INSTALL TEMPORARY SOIL AND EROSION CONTROL MEASURES. REMOVE UPON COMPLETION OF PROJECT AND ONCE VEGETATION IS ESTABLISHED. MAINTAIN THESE MEASURES IN WORKING ORDER AT ALL TIMES.
- COMPLY WITH THE INDIVIDUAL REQUIREMENTS ON THE AGENCY PERMITS.

EARTHWORK

- PROTECT ALL STRUCTURES AND THOSE AREAS DESIGNATED FOR PROTECTION.
- CONSTRUCT ALL GRADES TO THAT DESIGNATED ON THE PLANS. ANY DISCREPANCIES SHOULD BE IDENTIFIED AHEAD OF CONSTRUCTION TO THE ENGINEER. ENGINEER WILL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES THAT ARE NOT DISCUSSED PRIOR TO CONSTRUCTION.
- ALL STORED MATERIALS SUCH AS FILL MATERIALS, TOPSOIL, AND ANY OTHER TEMPORARY STOCKPILES SHALL BE STORED ON OWNER'S PROPERTY IN DESIGNATED AREAS.
- MAINTAIN ALL SLOPES TO A MINIMUM OF 3H:1V, UNLESS NOTED OTHERWISE. WHERE SLOPES ARE GREATER THAN 3H:1V, SLOPE STABILIZATION PRACTICES SHALL BE MAINTAINED UNTIL ADEQUATE VEGETATION IS ESTABLISHED.
- ALL SUB-BASE MATERIAL SHALL BE MDOT CLASS II.
- COMPACT ALL BACKFILLS AND FOUNDATIONS SOILS TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY.
- CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING GROUND COVER ON AREAS DISTURBED BY CONSTRUCTION AND SHALL REPAIR ALL WASHOUTS AND EROSION DURING THE GUARANTEE PERIOD ON ONE (1) YEAR AFTER GROUND COVER IS ESTABLISHED AT NO ADDITIONAL COST TO THE OWNER.

LAWNS AND GRASSES

- PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED.
- SEEDING ON NON-MAINTAINED AREAS: CEREAL RYE MIX
- SEEDING ON MAINTAINED AREAS: KENTUCKY BLUEGRASS
- FERTILIZER: 240 LBS/ACRE
- MULCH: STRAW MULCH AT 2 TONS/ACRE OR SPRAY APPLIED TACKIFIER
- EXCELSTOR MULCH BLANKETS: NORTH AMERICAN GREEN DS150 ON SLOPES GREATER THAN 3H:1V AND ALONG ALL TRAFFIC AREAS
- USE TURF REINFORCEMENT MATS IN AREAS WHERE SLOPES ARE GREATER THAN 3H:1V
- ROLL AND RAKE TOPSOIL, REMOVE RIDGES, AND FILL DEPRESSIONS. REMOVE ALL DELETERIOUS DEBRIS. ROCKS GREATER THAN 1" IN DIAMETER, CONSTRUCTION DEBRIS, ETC.
- PROMPTLY CLEANUP DEBRIS FROM OPERATIONS.

DIVISION 33 – UTILITIES / STORMWATER

MATERIAL

- CATCH BASINS SHALL BE INSTALLED WITH FINAL RIM ELEVATION AND INVERTS AS SHOWN ON PLANS. CATCH BASINS SHALL HAVE SUMPS MATCHING THE DIMENSIONS AS IDENTIFIED IN THE DETAILS WHERE SHOWN.
- ALL STONE SHALL BE CLEAN, CRUSHED, AND ANGULAR MEETING MDOT 6A CRUSHED REQUIREMENTS OR EQUAL.
- PIPING SHALL BE SMOOTHED LINED, CORRUGATED PLASTIC PIPE SIMILAR TO ADS N-12 WT 18 OR EQUAL AND SHALL BE DESIGNED TO MEET APPLICABLE AASHTO LOADING FOR INSTALLATIONS UNDER ASPHALT ROADS.
- INSTALLATION OF STORMWATER PIPE SHALL BE IN ACCORDANCE WITH ASTM D2421 AND MANUFACTURER GUIDELINES.
- GEOTEXTILE FABRIC SHALL BE FREE DRAINING, NON-WOVEN WITH AN EQUIVALENT WEIGHT TO 60Z AS PRODUCED BY CSI GEOTURF OR EQUAL.
- POSITIVE DRAINAGE TO STORM SEWER AT BUILDING PERIMETERS AND ENTRIES IS REQUIRED.
- STORM DRAINAGE LINES AND CULVERTS REQUIRED TO BE WATERTIGHT.
- ABANDONED MANHOLES ARE TO BE REMOVED AND PIPES CAPPED WITH GROUT.
- ALL DRAIN GRATES AND MANHOLE COVERS SHALL BE CAST IRON AND FABRICATED TO SUPPORT AN HS-20 DESIGN AXLE LOAD.
- ALL DRAIN GRATES AND MANHOLE COVERS SHALL BE SET TO FINAL GRADE BY USE OF CONCRETE RINGS AND ADJUSTMENT COLLARS MADE FOR THAT PURPOSE.

SPECIFICATIONS (CONTINUED)



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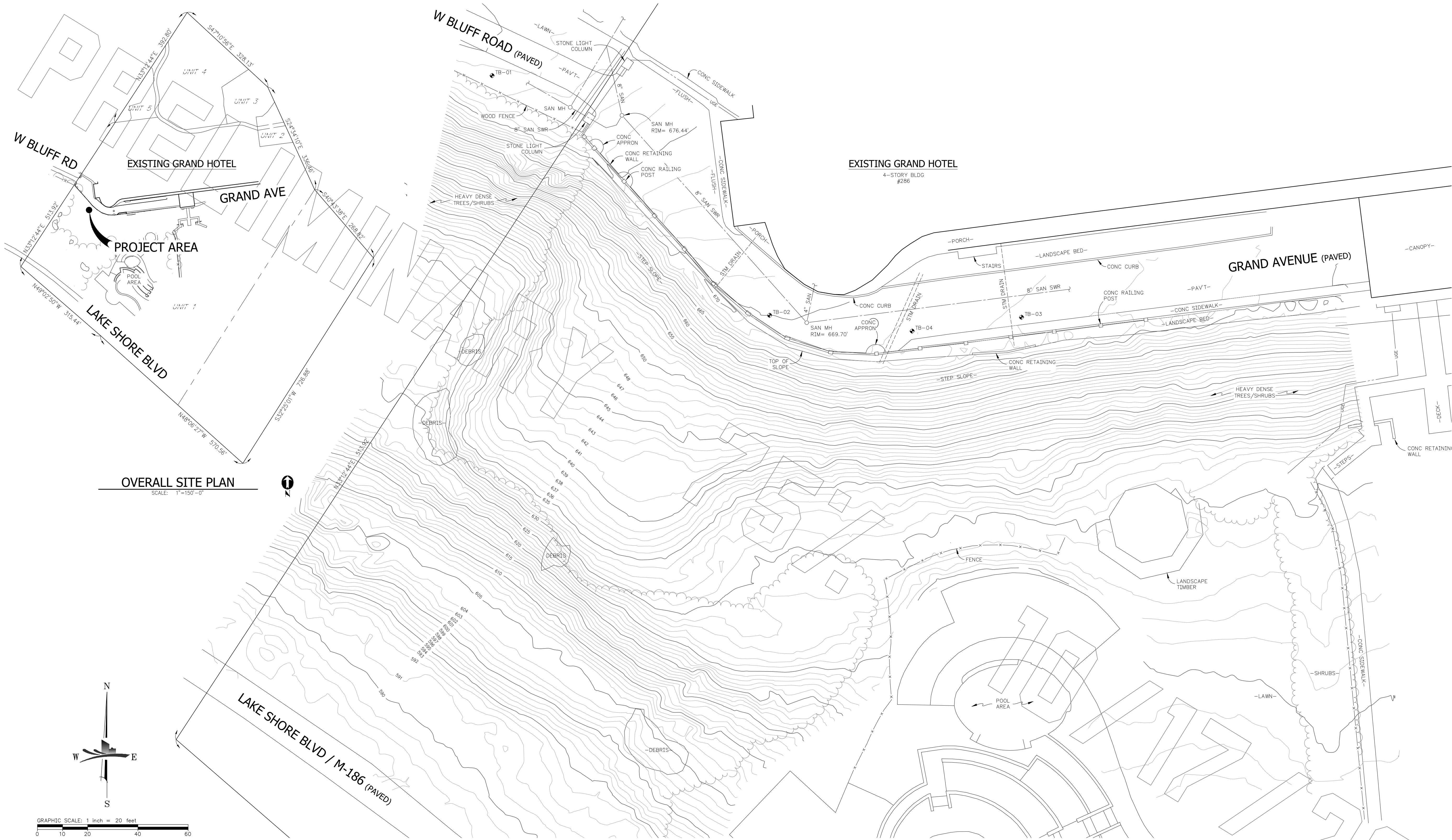
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**GRAND HOTEL
EARTH
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SYSTEM**

CLIENT:
POWER CONSTRUCTION

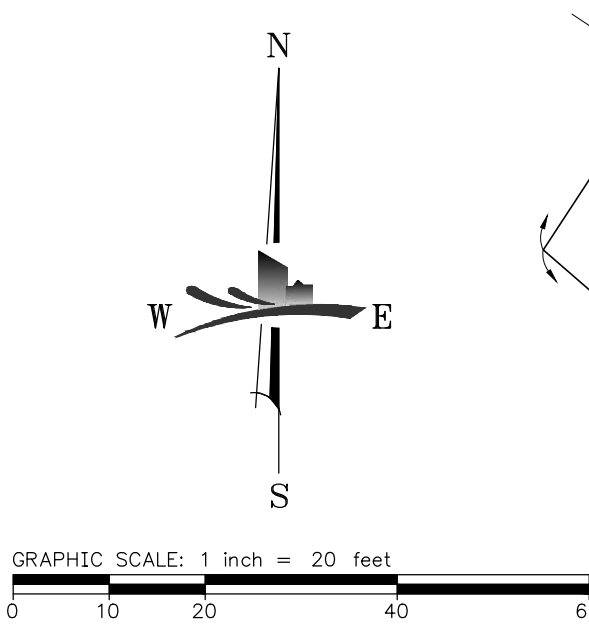
PROJECT LOCATION:
CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
**NOTES
&
SPECIFICATIONS**

PROJECT NUMBER: 23142
SHEET NUMBER: R1.0
NUMBER



OVERALL SITE PLAN
SCALE: 1"=150'-0"



NOTES

1. ALL BOUNDARY SURVEY INFORMATION PROVIDED BY LANDTECH SURVEYING, GRAND TRAVERSE, MI. ENGINEER MAKES NO REPRESENTATION OR GUARANTEES TO ITS ACCURACY. CONTACT LANDTECH SURVEYING (231) 943-0050 SHOULD ANY CONFLICTS WITH THIS INFORMATION ARISE.
2. DEVELOPMENT OF THIS SITE SHALL BE IN ACCORDANCE WITH STATE, COUNTY AND TOWNSHIP REQUIREMENTS.

LEGEND

- Tree Line
- Gravel
- = HORIZ CONTROL PNT



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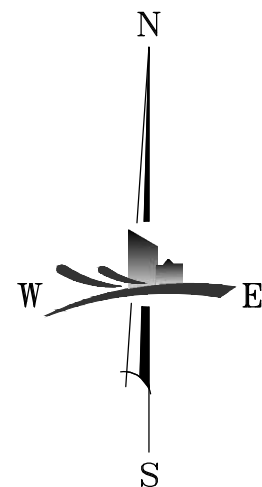
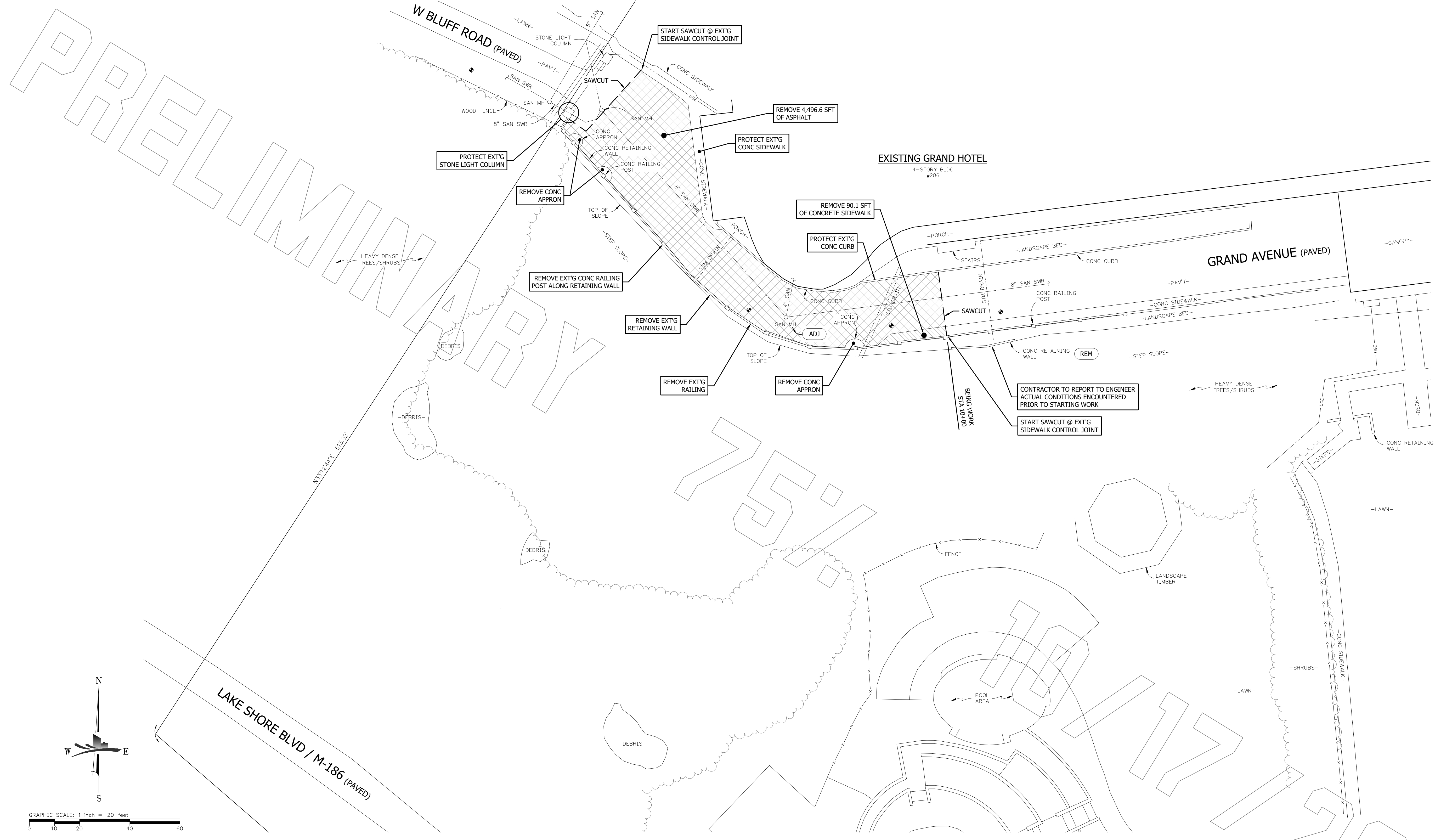
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EARTH
RETENSION
SYSTEM**

CLIENT:
POWER CONSTRUCTION

PROJECT LOCATION:
CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
**EXISTING
CONDITION PLAN**

PROJECT NUMBER: **23142**
SHEET NUMBER: **C1.0**



GRAPHIC SCALE: 1 inch = 20 feet
0 10 20 40 60

NOTES

1. ALL BOUNDARY SURVEY INFORMATION PROVIDED BY LANDTECH SURVEYING, GRAND TRAVERSE, MI. ENGINEER MAKES NO REPRESENTATION OR GUARANTEES TO ITS ACCURACY. CONTACT LANDTECH SURVEYING (231) 943-0050 SHOULD ANY CONFLICTS WITH THIS INFORMATION ARISE.
2. CONTRACTOR TO FIELD VERIFY EXISTING RETAINING LOCATION PRIOR TO CONSTRUCTION.
3. ENGINEER IS TO BE NOTIFIED IMMEDIATELY IF CONDITIONS VARY OUTSIDE OF THOSE PREPARED IN THESE PLANS.

LEGEND

- EXISTING CONC. SIDEWALK TO BE REMOVED
- EXISTING BIT., CONC., & GRAVEL TO BE REMOVED
- EXISTING SITE FEATURES TO BE REMOVED
- EXISTING CONTOURS
- REMOVE ITEM
- RELOCATE ITEM
- ADJUST ITEM
- PROTECTION ITEM
- SALVAGE ITEM
- CLEARING
- REMOVAL



THE LOCATION OF THE EXISTING UTILITIES, AS SHOWN ON THIS PLAN, ARE APPROXIMATE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL LOCATION AND DEPTH OF ALL EXISTING UTILITIES. THE OWNER AND THE SURVEYOR SHALL NOT BE RESPONSIBLE FOR ANY OMISSION OR VARIATION FROM THE LOCATION SHOWN. THE CONTRACTOR SHALL NOTIFY "MISS DIG" AT 1 (800) 482-7171 OR 811 THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

ON 22x34 SHEET SCALE: FULL (AS NOTED)
ON 11x17 SHEET SCALE: HALF

REV#	DESCRIPTION	DATE
A	REVIEW 30% DESIGN	04/01/2023
B	REVIEW 50% CONSTRUCTION REVIEW	04/01/2023
C	REVIEW 75% DESIGN	04/01/2023

DRAWN BY: MS	CHECK BY: 0000	APPROVED BY: 0000	CREATED: 09/04/2023
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REVISION:	
DATE ISSUED:	10/18/2023
ISSUE PHASE:	REVIEW - 75% DESIGN

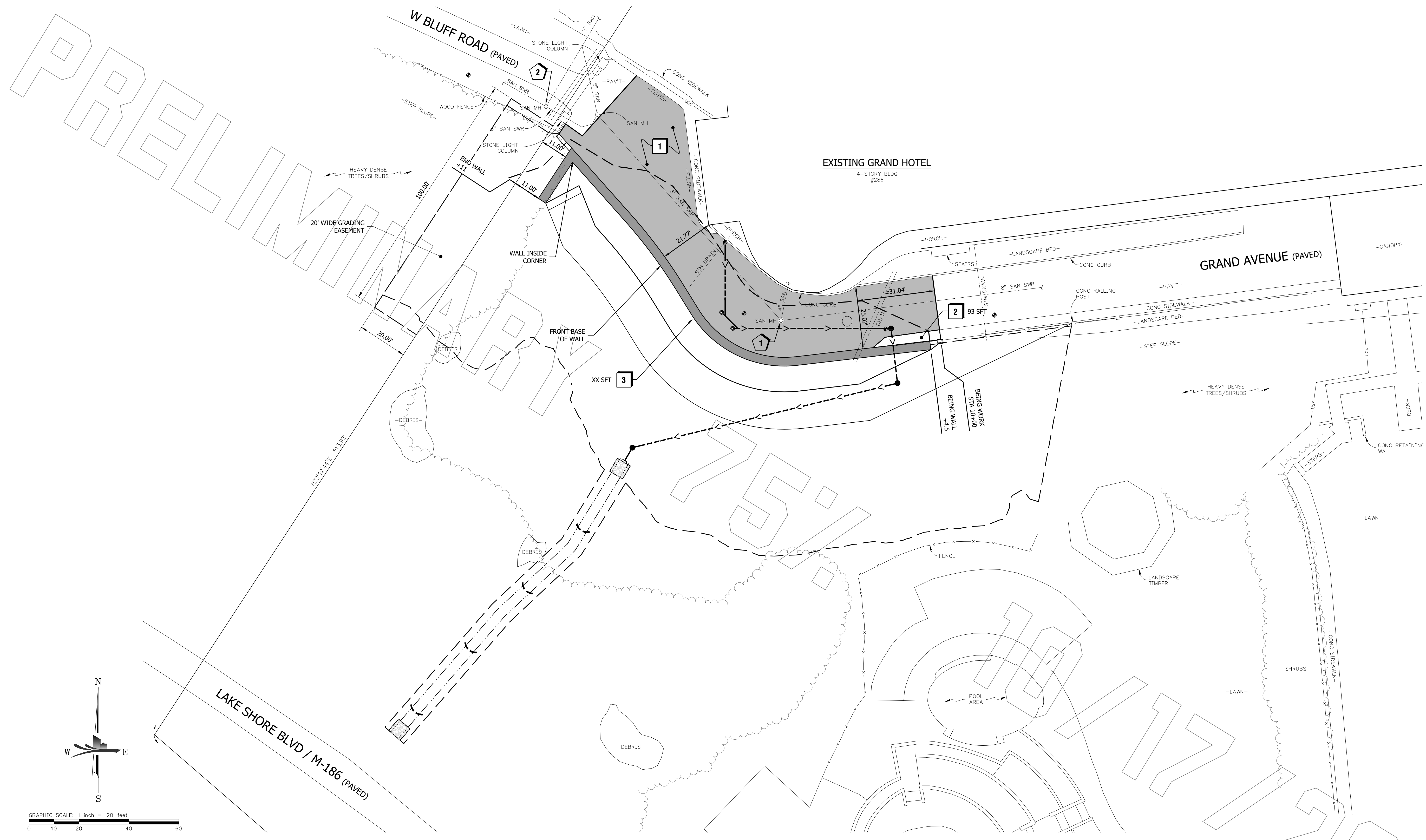
PROJECT TITLE:
**GRAND HOTEL
EARTH
RETENSION
SYSTEM**

CLIENT:
POWER CONSTRUCTION

PROJECT LOCATION:
CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
DEMOLITION
PLAN

PROJECT NUMBER: 23142
SHEET NUMBER: C2.0



ON 22x34 SHEET SCALE: FULL (AS NOTED)
ON 11x17 SHEET SCALE: HALF

REV#	DESCRIPTION	DATE
A	REVIEW 30% DESIGN	10/18/2023
B	DESIGNED FOR CONSTRUCTION REVIEW	10/18/2023
C	REVIEW 75% DESIGN	10/18/2023

DESIGNED BY:	CHECK BY:	APPROVED BY:	CREATED:
			10/18/2023

REVISION:
DATE ISSUED: 10/18/2023
ISSUE PHASE: REVIEW - 75% DESIGN
PROJECT TITLE:
**GRAND HOTEL
EARTH
RETENTION
SYSTEM**

NOTES

- DEVELOPMENT OF THIS SITE SHALL BE IN ACCORDANCE WITH STATE, COUNTY AND CITY REQUIREMENTS.
- ALL DISTURBED AREAS SHALL BE TOPSOILED, SEEDED, MULCHED, AND FERTILIZED.

PROJECT INFORMATION

APPLICANT
GRAND HOTEL COMPANY
286 GRAND AVE
MACKINAC ISLAND, MI 49757

SITE INFORMATION
PARCEL CURRENT ZONING: HB
HOTEL / BOARDING HOUSE
PROPOSED USE: SENIOR LIVING FACILITY
PARCEL ADDRESS: 286 GRAND AVE, MACKINAC ISLAND, MI 49757
PROPERTY TAX ID:
SECTION, TOWN, RANGE: 23, T40N, R3W
NET AREA OF PARCELS: . AC
GROSS AREA OF PARCELS: . AC
YARD SETBACK:

PROPOSED STRUCTURE
RETAINING WALL STRUCTURE = XX SFT

PROPERTY PARCEL DESCRIPTION (AS PROVIDED)
CITY OF MACKINAC ISLAND, MACKINAC COUNTY, MICHIGAN:
UNIT 1, GRAND HOTEL SITE CONDOMINIUM, CONDOMINIUM SUBDIVISION PLAN NO. 36, ACCORDING TO THE MASTER DEED THEREOF, AS RECORDED IN LIBER 484, PAGE 249, MACKINAC COUNTY RECORDS.

CONSTRUCTION NOTES

- INSTALL BITUMINOUS PAVT SEE DETAIL 'X/CX'
 - INSTALL CONCRETE SIDEWALK SEE DETAIL 'X/CX'
 - INSTALL SEGMENTAL RETAINING WALL SEE DETAIL 'X/CX'
 - INSTALL DECORATIVE RAILING SEE DETAIL 'X/CX'
- 1 ADJUST EXT'G SAN MANHOLE RIM= 670.38'
- 2 INSTALL NEW SANITARY SEWER GRATE & SOLID COVER

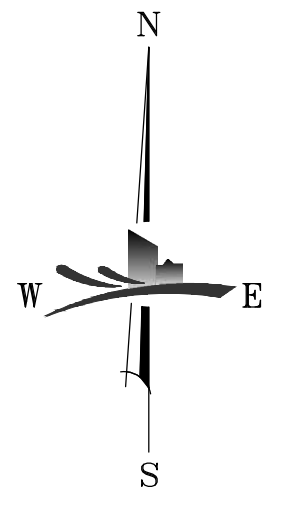
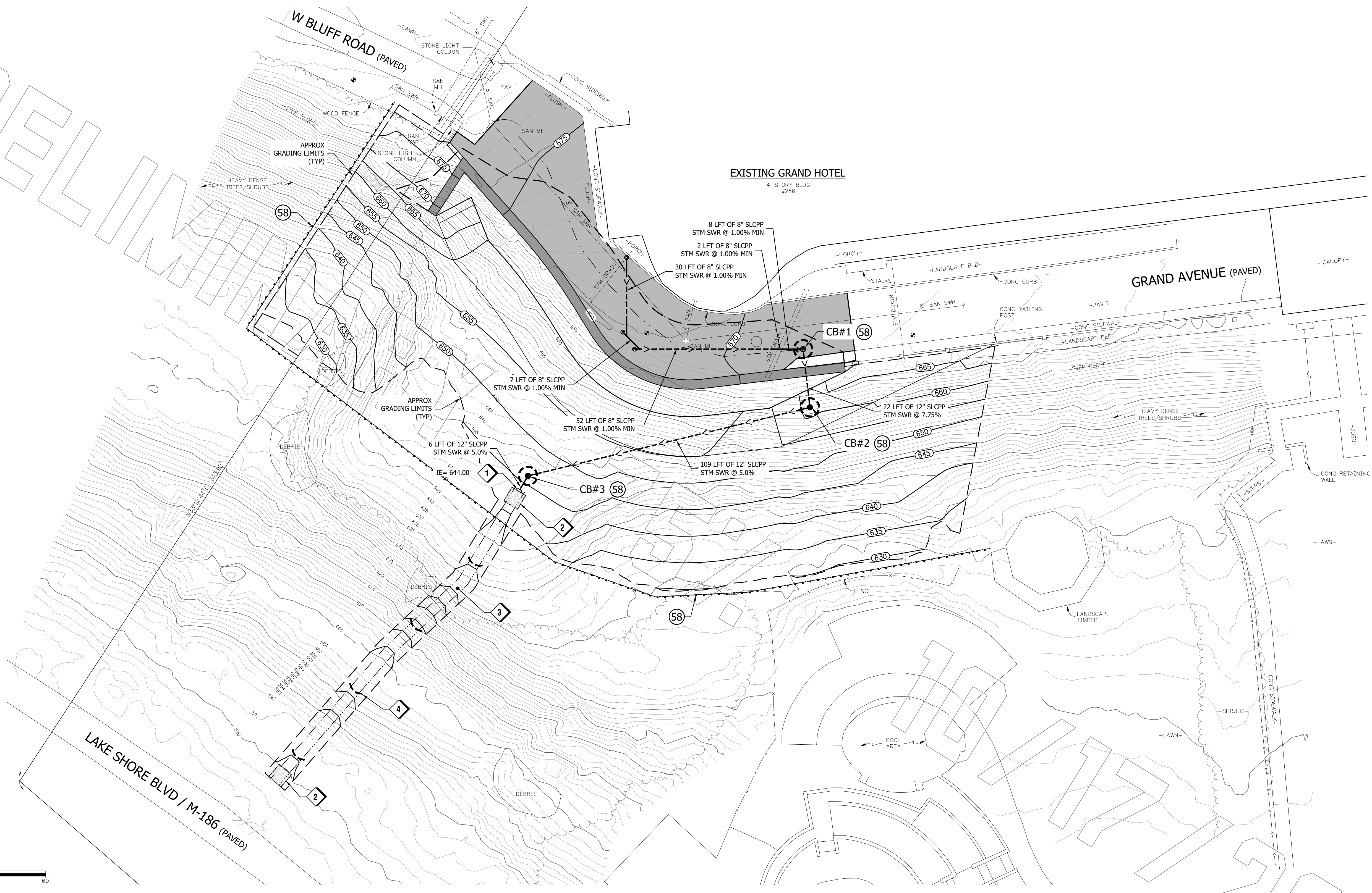
CLIENT:
POWER CONSTRUCTION

PROJECT LOCATION:
CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
**DIMENSIONAL
SITE PLAN
&
UTILITY PLAN**

PROJECT NUMBER: 23142
SHEET NUMBER: C2.1

PRELIMINARY



NOTES

- VERTICAL DATUM IS NAVD88, CONTOUR INTERVAL IS 1.0 FEET.
 - LOCATION AND TYPE OF EROSION CONTROL MEASURES ARE IDENTIFIED ON THE SKETCH BY KEY NUMBERS. EG, RELATING TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY UNIFIED KEYING SYSTEM AND BEST MANAGEMENT PRACTICES.
 - ALL STRUCTURES SHALL BE KEPT FREE OF DEBRIS DURING CONSTRUCTION USING CATCH BASIN INLET FILTERS.
 - CONTRACTOR IS TO USE THIS KEYING SYSTEM FOR ALL RESTORATION AND STRUCTURES TO BE MAINTAINED DURING CONSTRUCTION.
- ⑤ DENOTES TEMPORARY PRACTICES
 [5] DENOTES PERMANENT PRACTICES

CONSTRUCTION NOTES

- INSTALL 12" SLCPP W/ FLARED END SECTIONS
- INSTALL 1.3 CYD OF 4"-8" RIP RAP (6"v6") @ END OF DRAINAGE CHANNEL
- INSTALL DRAINAGE CHANNEL W/ TURF REINFORCEMENT MAT SEE DETAIL 'X/CXXX'
- INSTALL PERMEABLE DITCH BARRIER CHECK DAM SEE DETAIL 'X/CXXX'

CATCH BASIN SCHEDULE

CATCH BASIN	COVER TYPE
CB#1 (4' DIA)	EJTW #1020 W/ TYPE M3 ADA STYLE GRATE
CB#2 (2' DIA)	ADS 2499CGOL SOLID LOCKING COVER

CATCH BASIN COVER SCHEDULE

CATCH BASIN	COVER TYPE
A	EJTW #1020 W/ TYPE M3 ADA STYLE GRATE
B	ADS 2499CGOL SOLID LOCKING COVER

LEGEND

	PROPOSED ASPHALT
	PROPOSED CONCRETE
	EXISTING CONTOURS
	PROPOSED CONTOUR
	PROPOSED STORM SEWER LINE
	PROPOSED VALLEY
	PROPOSED RIDGE
	PROPOSED CATCH BASIN
	PROPOSED CLEANOUT
	Grading Limits
	DIRECTION OF DRAINAGE
	PROPOSED SLOPE X.X%
	SPOT GRADE
	MATCH EXISTING

SE&SC KEYING SYSTEM

6	SEEDING w/ MULCH OR MATTING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER. EFFECTIVE FOR DRAINAGEWAYS w/ LOW VELOCITY. EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL. SHOULD INCLUDE PREPARED TOPSOIL BED.
10	MULCHING	USED ALONE TO PROTECT EXPOSED AREA FOR SHORT PERIODS. PROTECTS SOIL FROM IMPACT OF FALLING RAIN. PRESERVES SOIL MOISTURE AND PROTECTS GERMINATING SEED FROM TEMPERATURE EXTREMES.
15	PAVING	PROTECTS AREA WHICH OTHERWISE CANNOT BE PROTECTED, BUT INCREASES RUNOFF VOLUME AND VELOCITY. IRREGULAR SURFACE WILL HELP SLOW VELOCITY.
57	GEOTEXTILE SILT FENCE	USES GEOTEXTILE AND POSTS OR BALES MAY BE CONSTRUCTED OR PREPARED EASY TO CONSTRUCT AND LOCATE AS NECESSARY.
58	[Symbol]	USE AT STORMWATER INLETS ESPECIALLY AT CONSTRUCTION SITES.
61	FILTER ROLLS	IN AREAS REQUIRING IMMEDIATE PROTECTION OF SLOPES AGAINST SURFACE EROSION AND GULLY FORMATION AND FOR PERIMETER SEDIMENT CONTROL.

ON 22x34 SHEET SCALE: FULL (AS NOTED)
 ON 11x17 SHEET SCALE: HALF

REV#	DESCRIPTION	DATE
A	REVIEW 30% DESIGN	04/05/2023
B	DESIGN PERMIT REVIEW	04/05/2023
C	REVIEW 75% DESIGN	04/05/2023

DESIGNED BY:	CHECKED BY:	APPROVED BY:	CREATED:
			09/14/2023
REVISION:		DATE:	
		10/18/2023	
ISSUE PHASE:		REVIEW - 75% DESIGN	
PROJECT TITLE:			

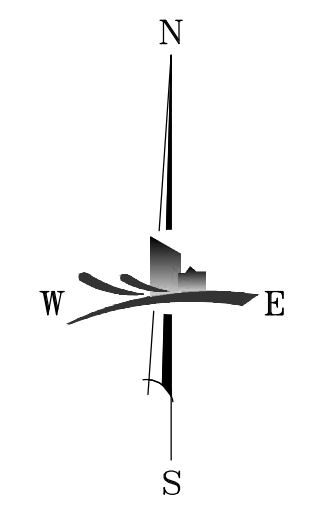
**GRAND HOTEL
 EARTH
 RETENTION
 SYSTEM**

CLIENT:
 POWER CONSTRUCTION

PROJECT LOCATION:
 CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
**GRADING,
 SOIL EROSION
 &
 STORMWATER CONTROL PLAN**

PROJECT NUMBER: 23142
 SHEET NUMBER: C2.2



GRAPHIC SCALE: 1 inch = 10 feet
 0 5 20 20 30

MACHIN ENGINEERING
 1235 E FRONT ST, Suite A
 TRAVERSE CITY, MI PH 231.935.1530
 www.machinengineering.net

ON 22x34 SHEET SCALE: FULL (AS NOTED)
 ON 11x17 SHEET SCALE: HALF

REV#	DESCRIPTION	DATE
A	REVIEW 50% DESIGN	08/01/2023
B	DESIGN 75% CONSTRUCTION REVIEW	08/01/2023
C	REVIEW 75% DESIGN	08/01/2023

REVISION: _____
 DATE ISSUED: 10/18/2023
 ISSUE PHASE: REVIEW - 75% DESIGN

PROJECT TITLE:
**GRAND HOTEL
 EARTH
 RETENTION
 SYSTEM**

CLIENT:
 POWER CONSTRUCTION

PROJECT LOCATION:
 CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
**ENLARGED
 GRADING
 PLAN**

PROJECT NUMBER: 23142
 SHEET NUMBER: C3.0

C:\USERS\KURTSCH\APPDATA\LOCAL TEMP\ASPHILIB3\12584\32142_ENC_B3\DWG (10-18-23 3:54 PM) KURTSCHULTZ

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"WALL XXXX" - RETAINING WALL PLAN

SCALE: H: 1"=10'-0"
SCALE: V: 1"=10'-0"

PRELIMINARY

75%

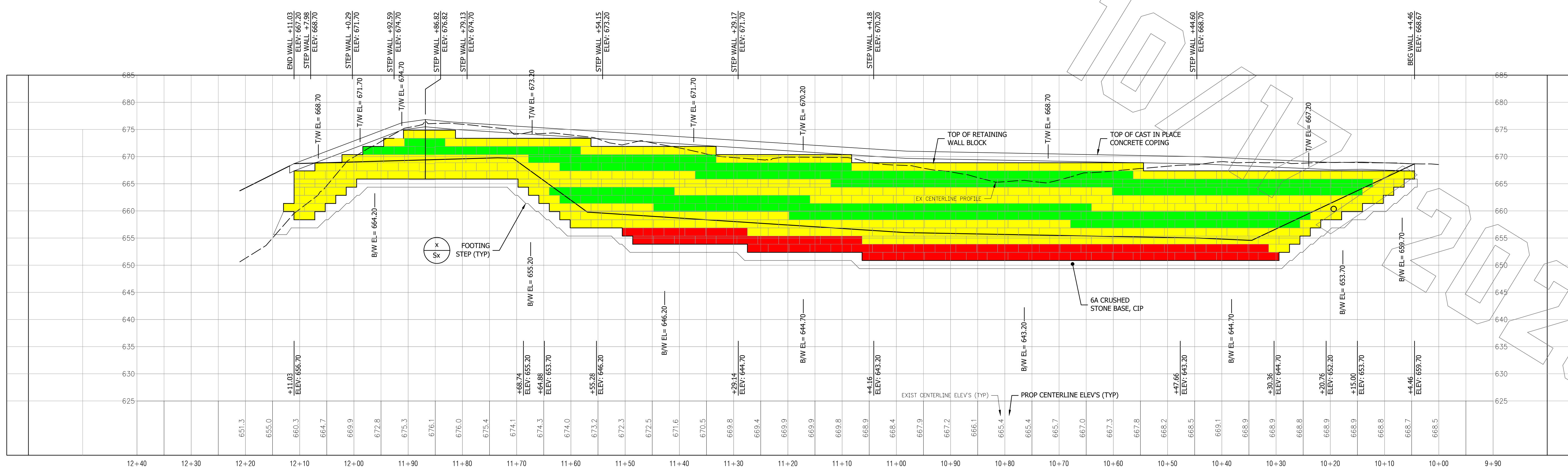
MACHIN ENGINEERING
1235 E FRONT ST, Suite A
TRAVERSE CITY, MI PH 231.935.1530
www.machinengineering.net

LEGEND

- PROP FULL BOTTOM BLOCK
- PROP GEOGRAD REINF BLOCK
- PROP LANDSCAPE BLOCK
- PROP 41" BLOCK
- PROP 60" BLOCK

NOTES

- ENGINEER IS TO BE NOTIFIED IMMEDIATELY IF CONDITIONS VARY OUTSIDE OF THOSE PREPARED IN THESE PLANS.



ON 22x34 SHEET SCALE: FULL (AS NOTED)
ON 11x17 SHEET SCALE: HALF

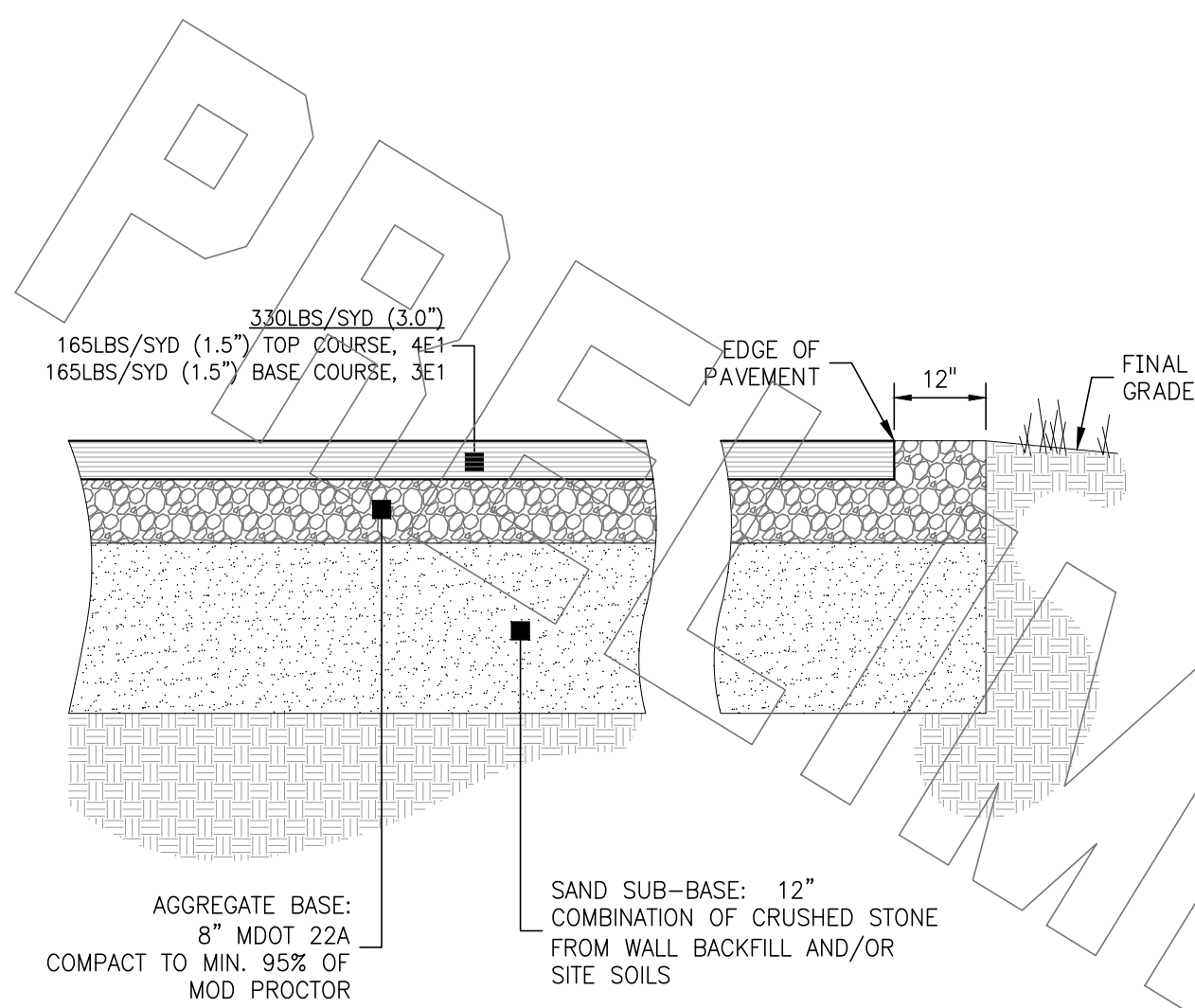
REV#	DESCRIPTION	DATE
A	REVIEW 30% DESIGN	KAS/03/23
B	DESIGNED FOR CONSTRUCTION REVIEW	KAS/01/23
C	REVIEW 75% DESIGN	KAS/01/23

DESIGNED BY: KAS
CHECKED BY: KAS
APPROVED BY: KAS
CREATED: 09/14/2023

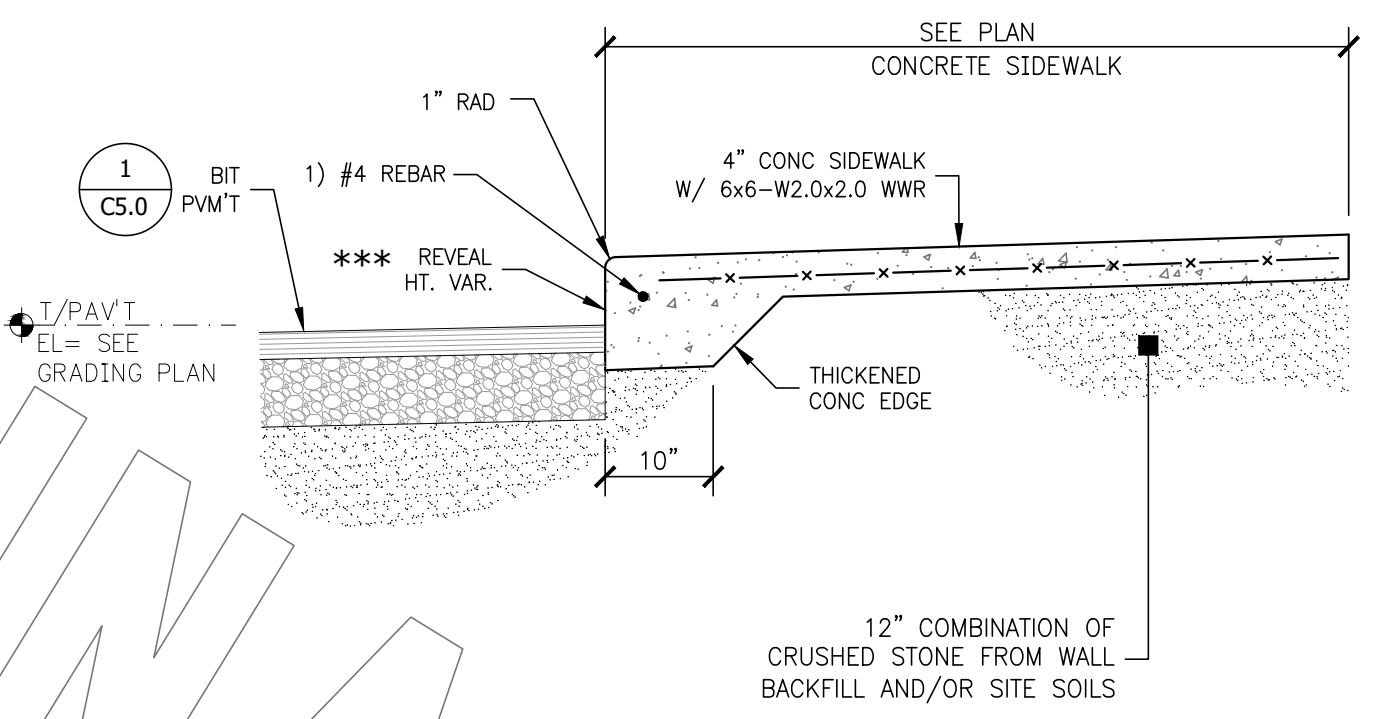
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DATE ISSUED: 10/18/2023
ISSUE PHASE: REVIEW - 75% DESIGN
PROJECT TITLE: GRAND HOTEL EARTH RETENTION SYSTEM

CLIENT: POWER CONSTRUCTION
PROJECT LOCATION: CITY OF MACKINAC ISLAND, MI
SHEET TITLE: PROFILE WALL XX & WALL XX DESIGN

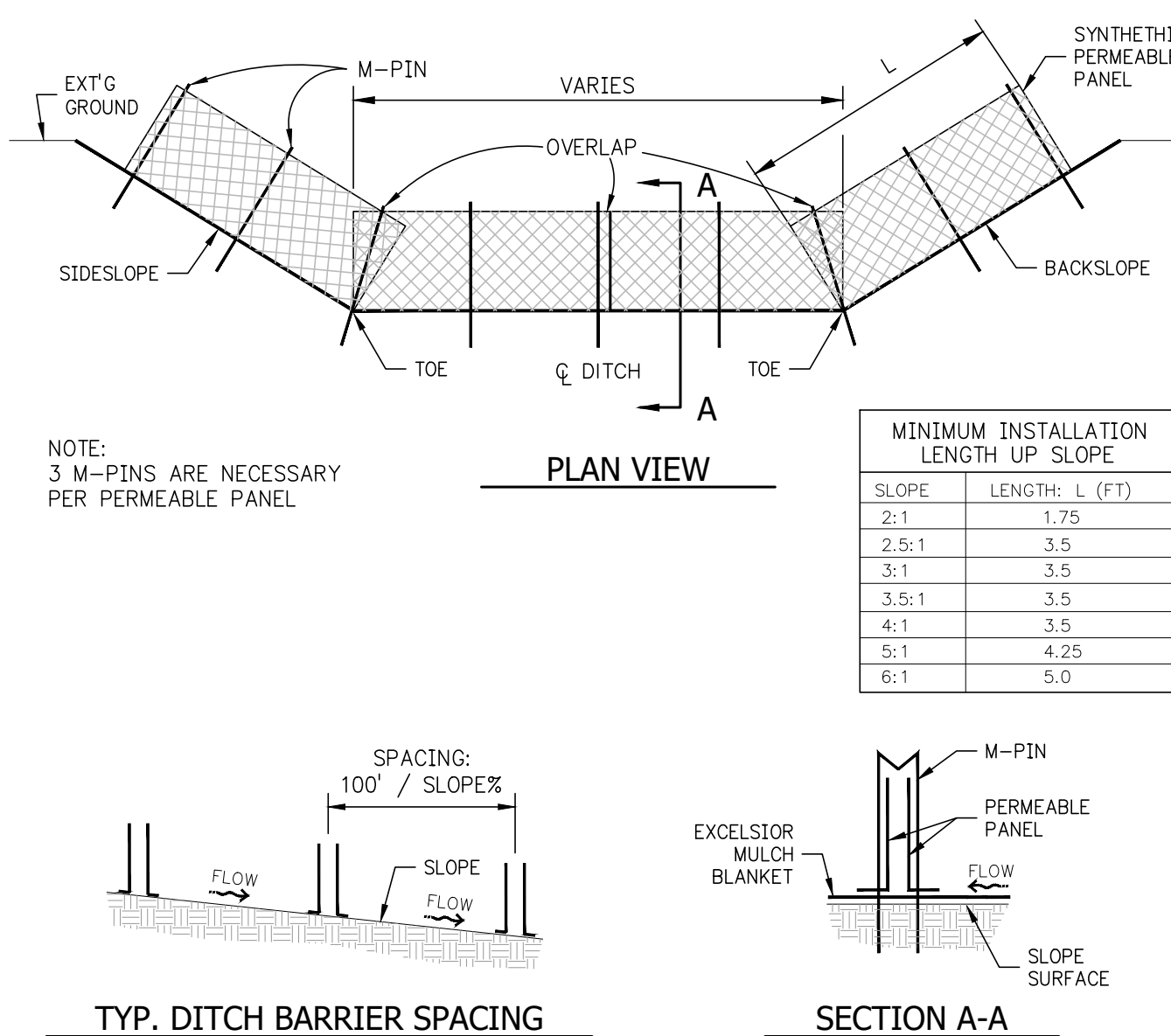
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SHEET NUMBER: C4.0



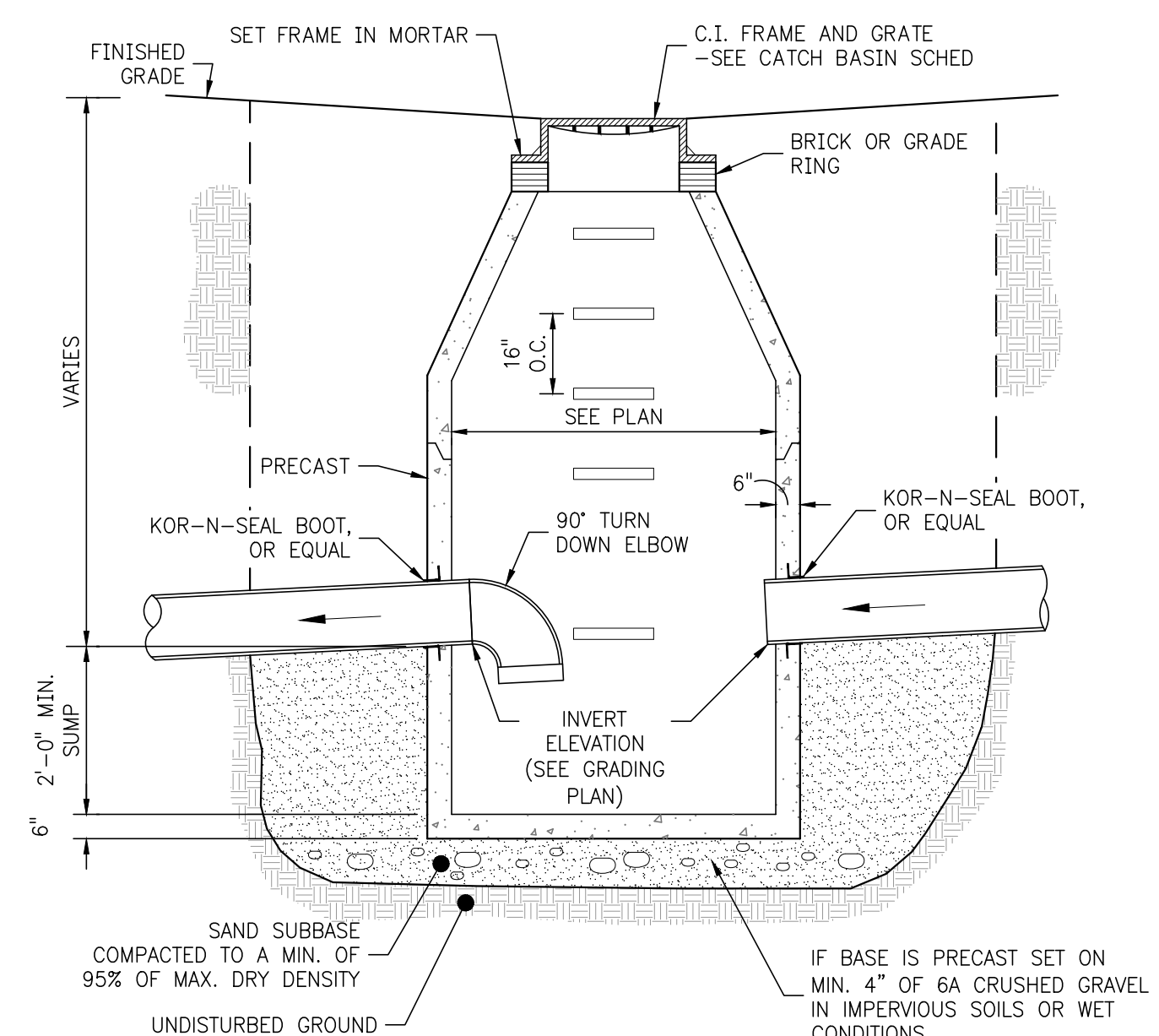
BITUMINOUS PAVEMENT DETAIL N.T.S. 1



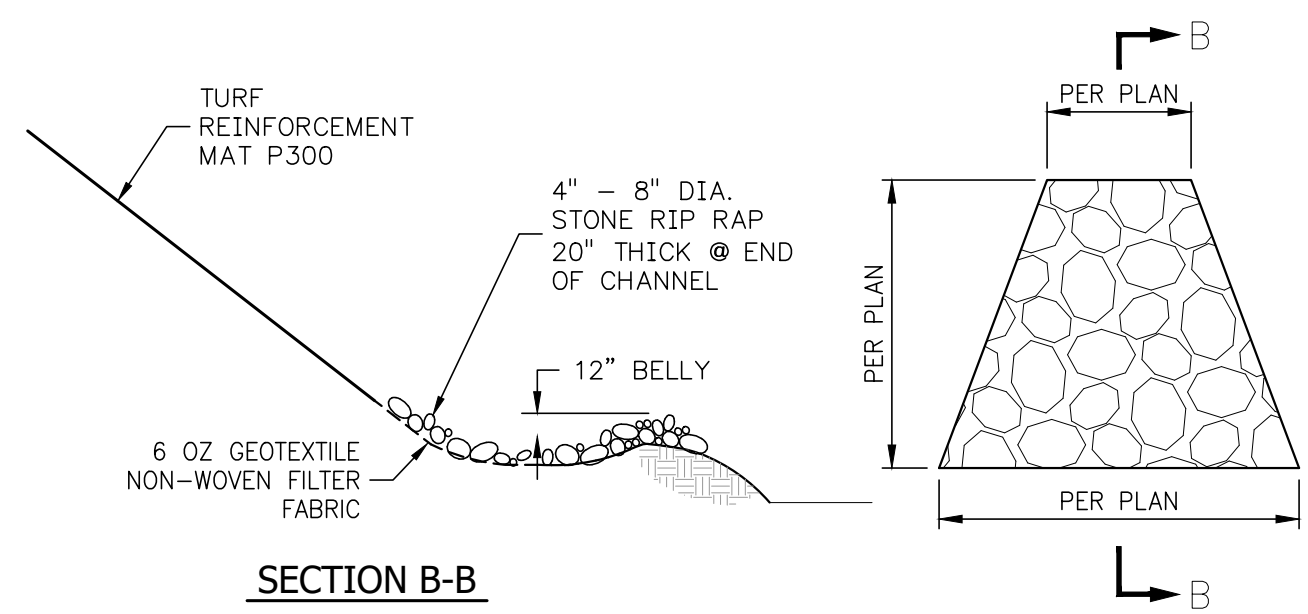
CONCRETE INTEGRAL SIDEWALK DETAIL N.T.S. 2



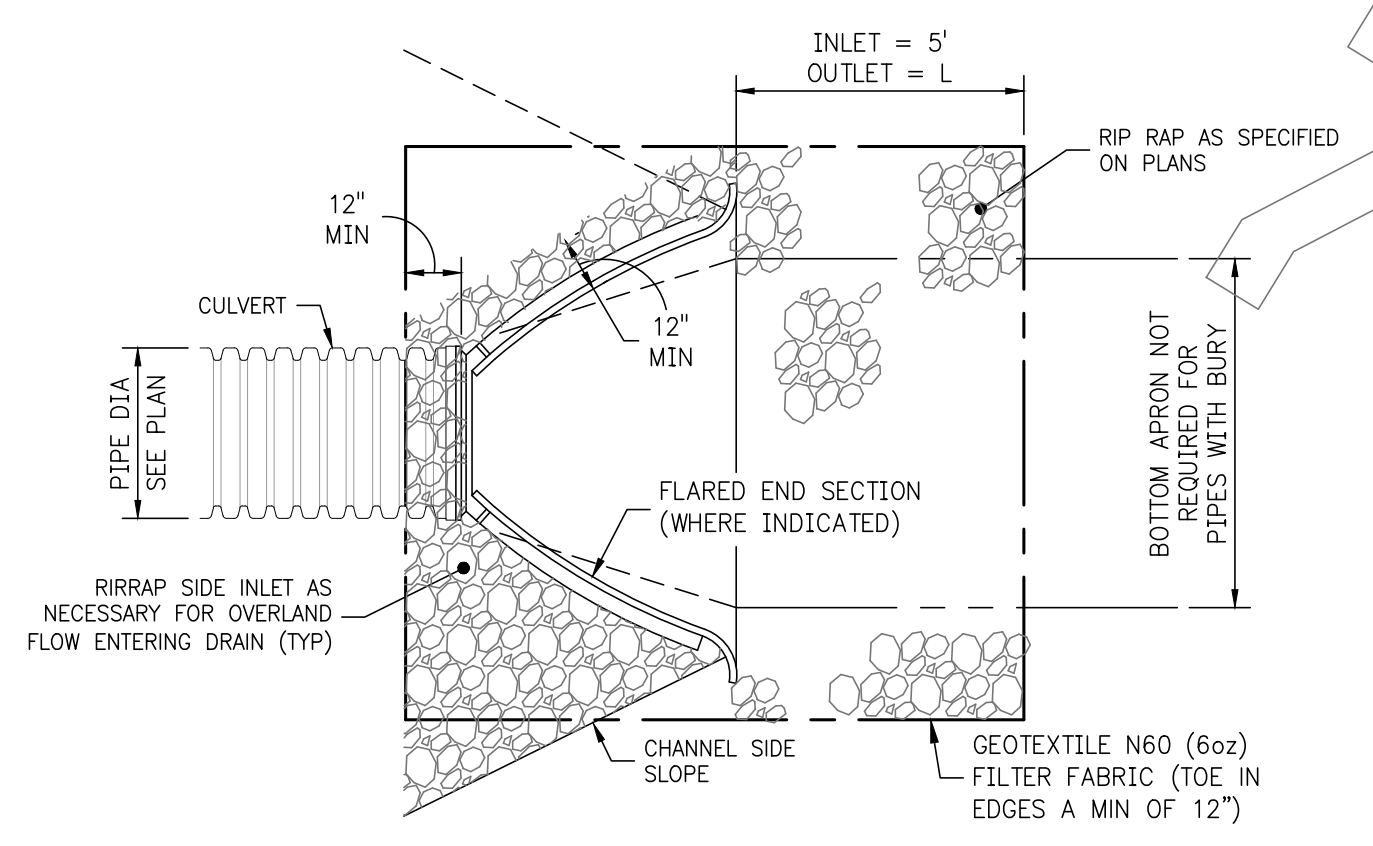
PERMEABLE DITCH BARRIER SYSTEM DETAIL N.T.S. 3



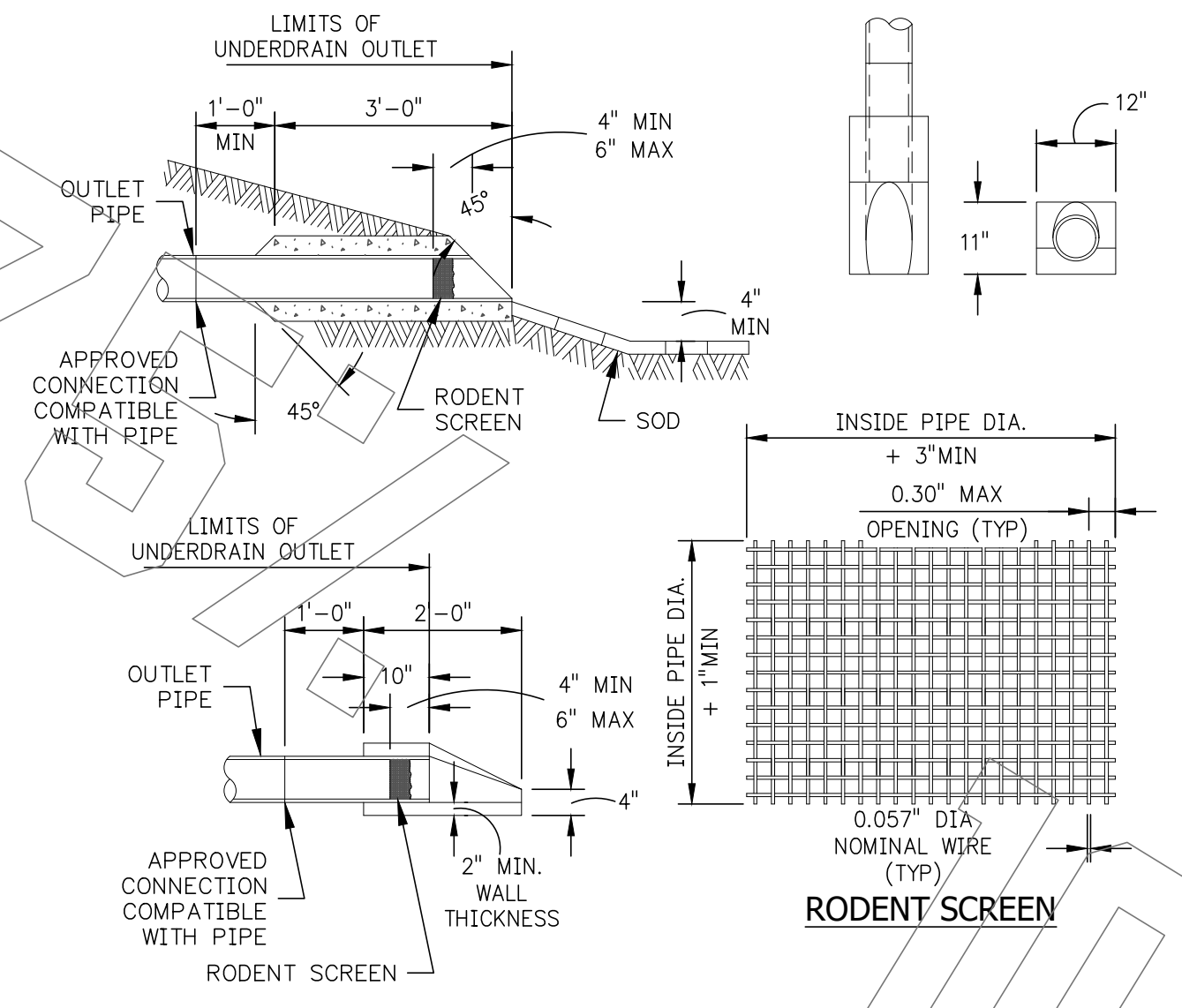
4 FT DIA CATCH BASIN W/SUMP N.T.S. 4



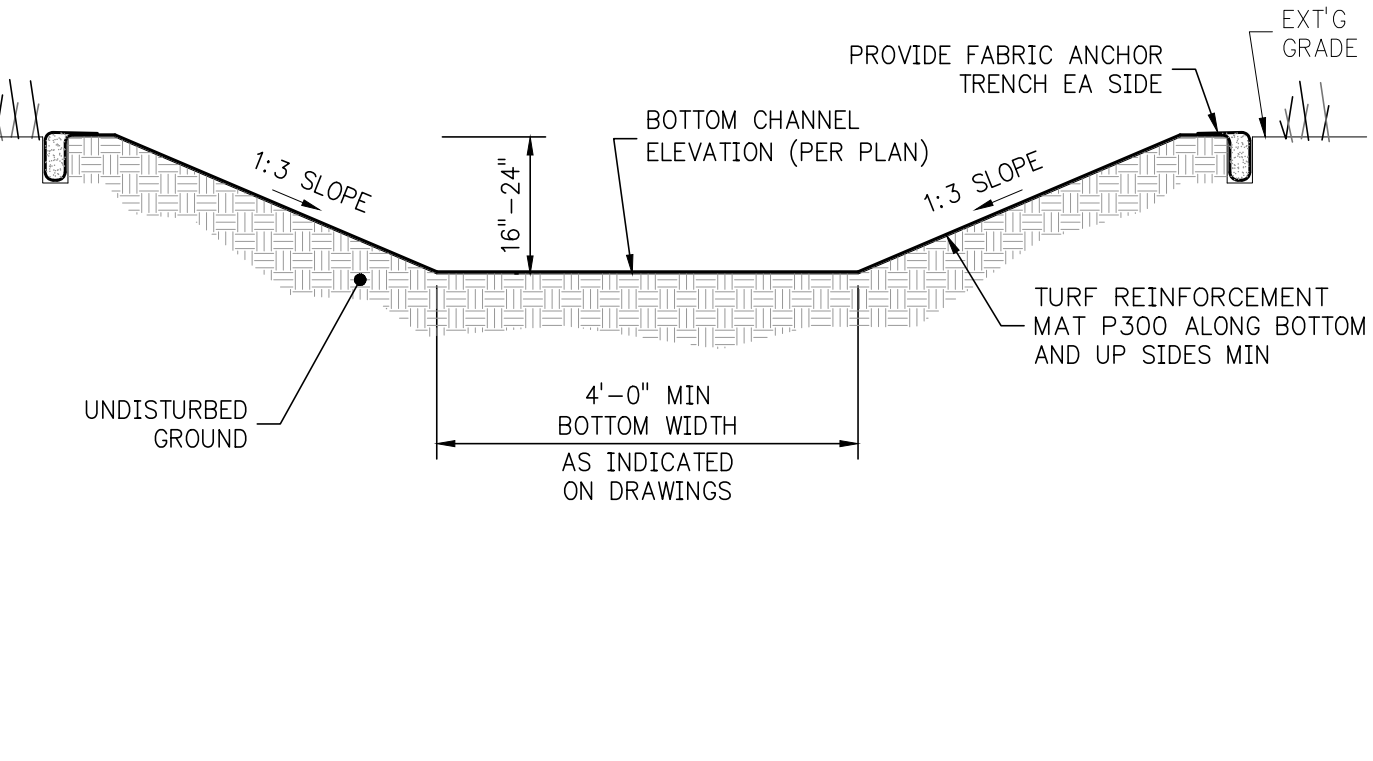
DRAINAGE CHANNEL W/ TURF REINFORCEMENT MAT DETAIL N.T.S. 5



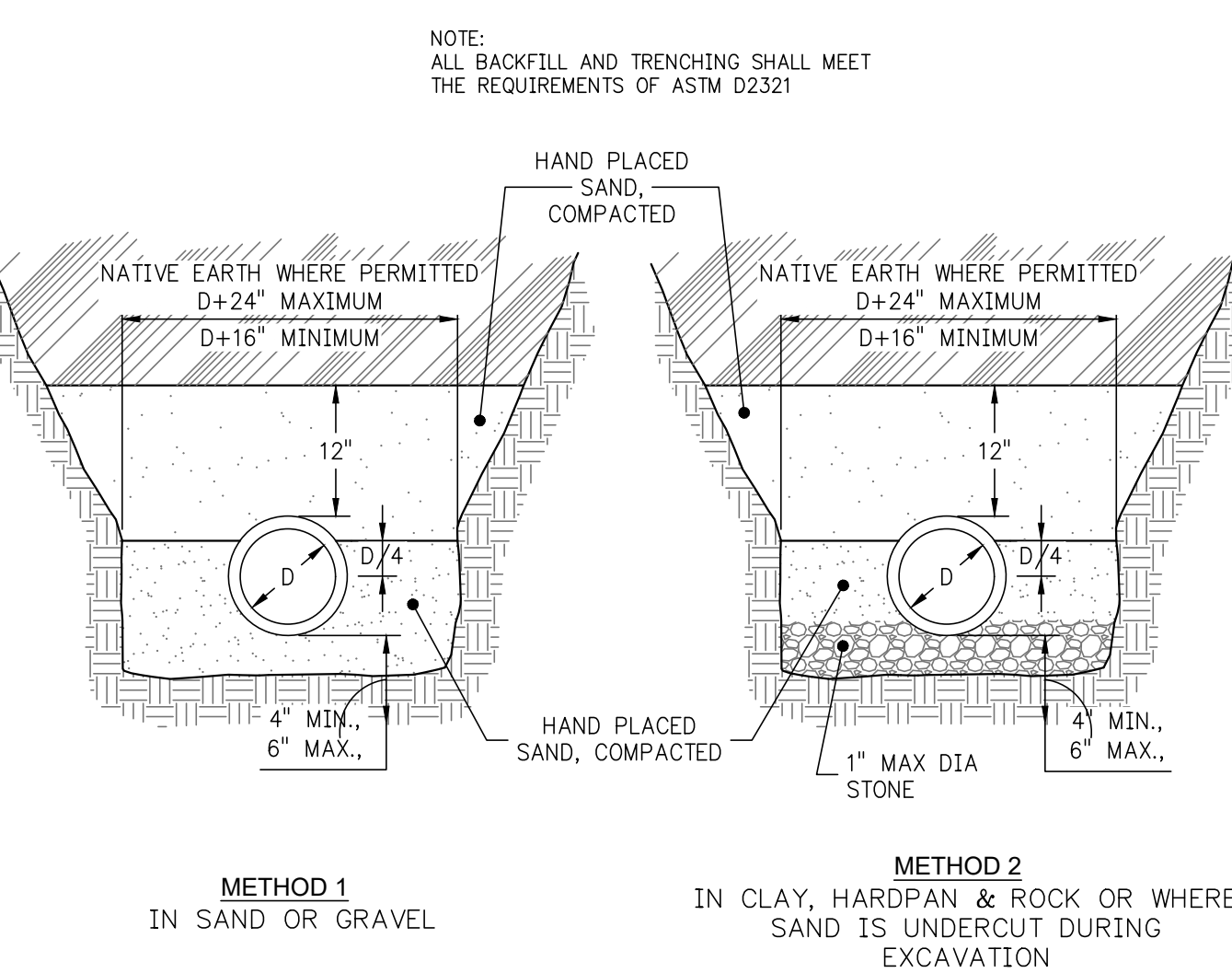
FLARED END SECTION DETAIL N.T.S. 6



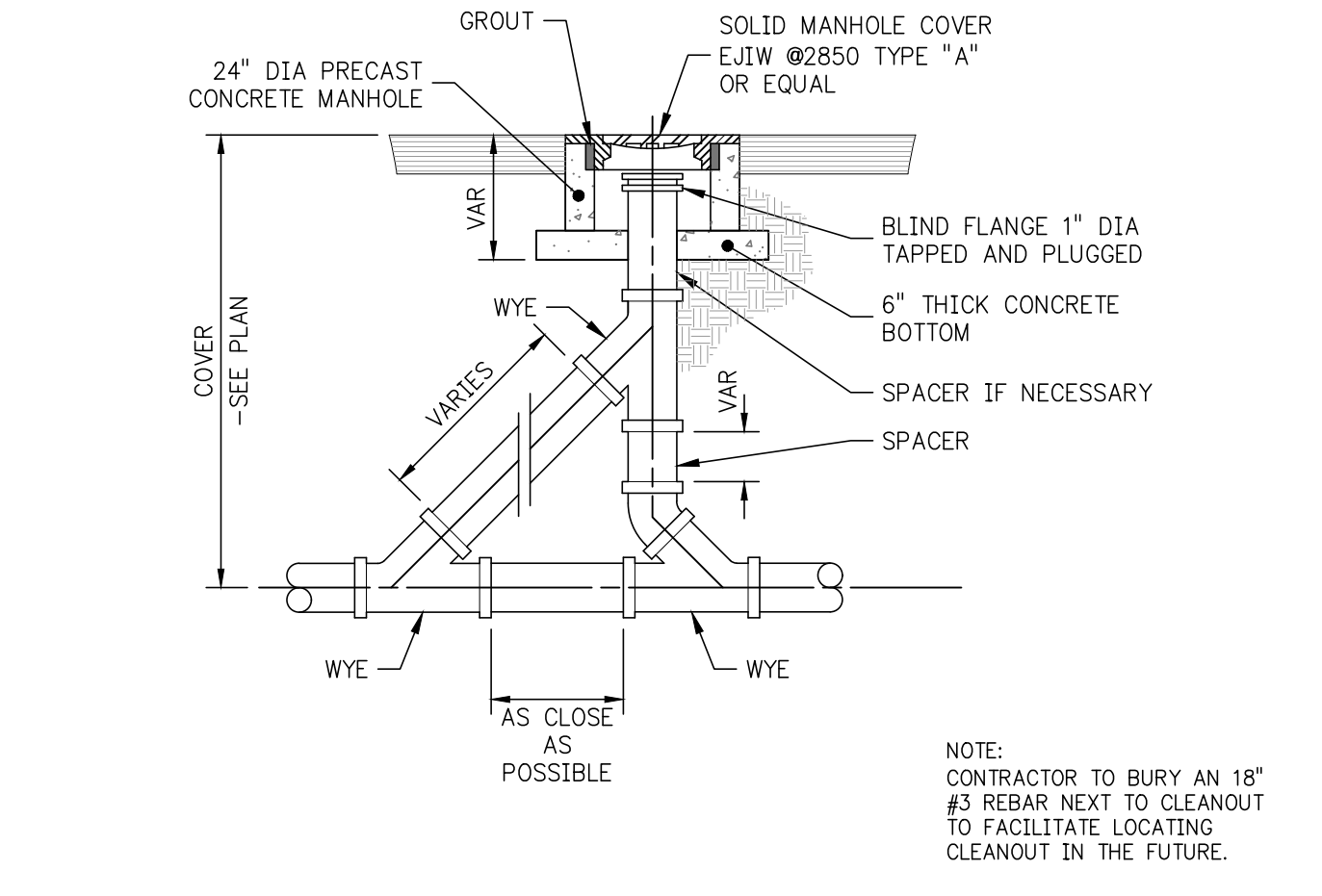
MDOT OUTLET W/ RODENT PROTECTION N.T.S. 7



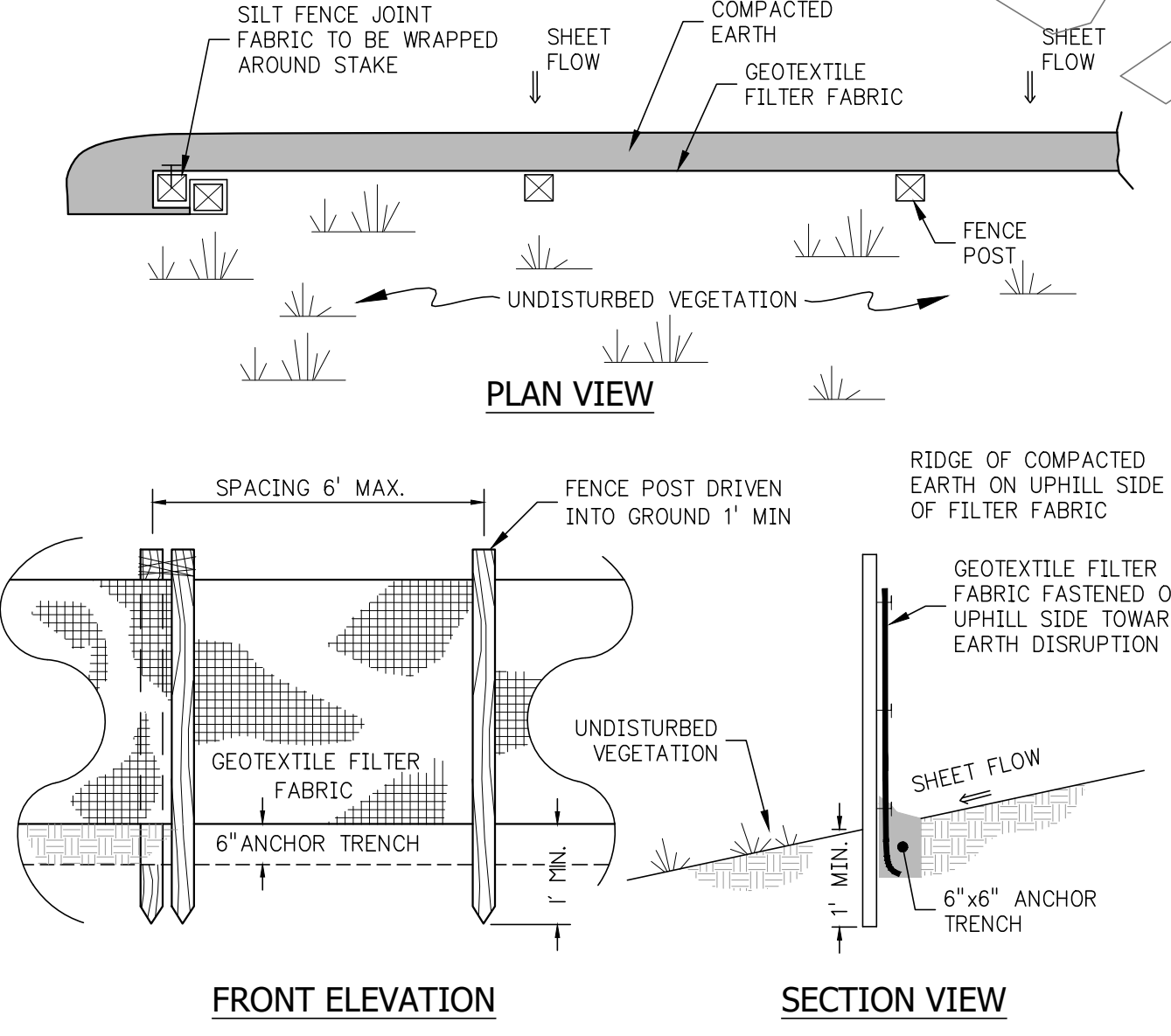
DRAINAGE CHANNEL DETAIL N.T.S. 8



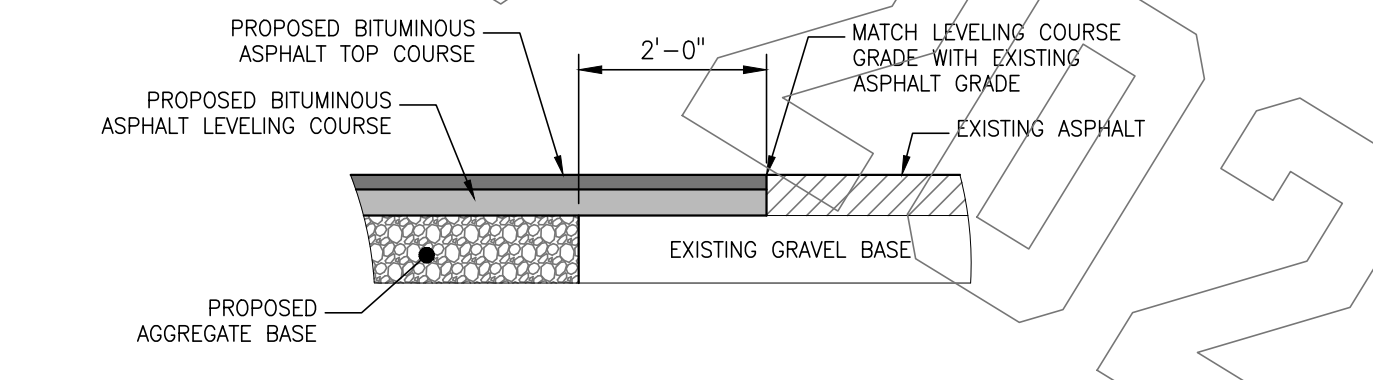
PIPE BEDDING DETAIL N.T.S. 9



STORM SEWER CLEANOUT DETAIL N.T.S. 10



SILT FENCE N.T.S. 11



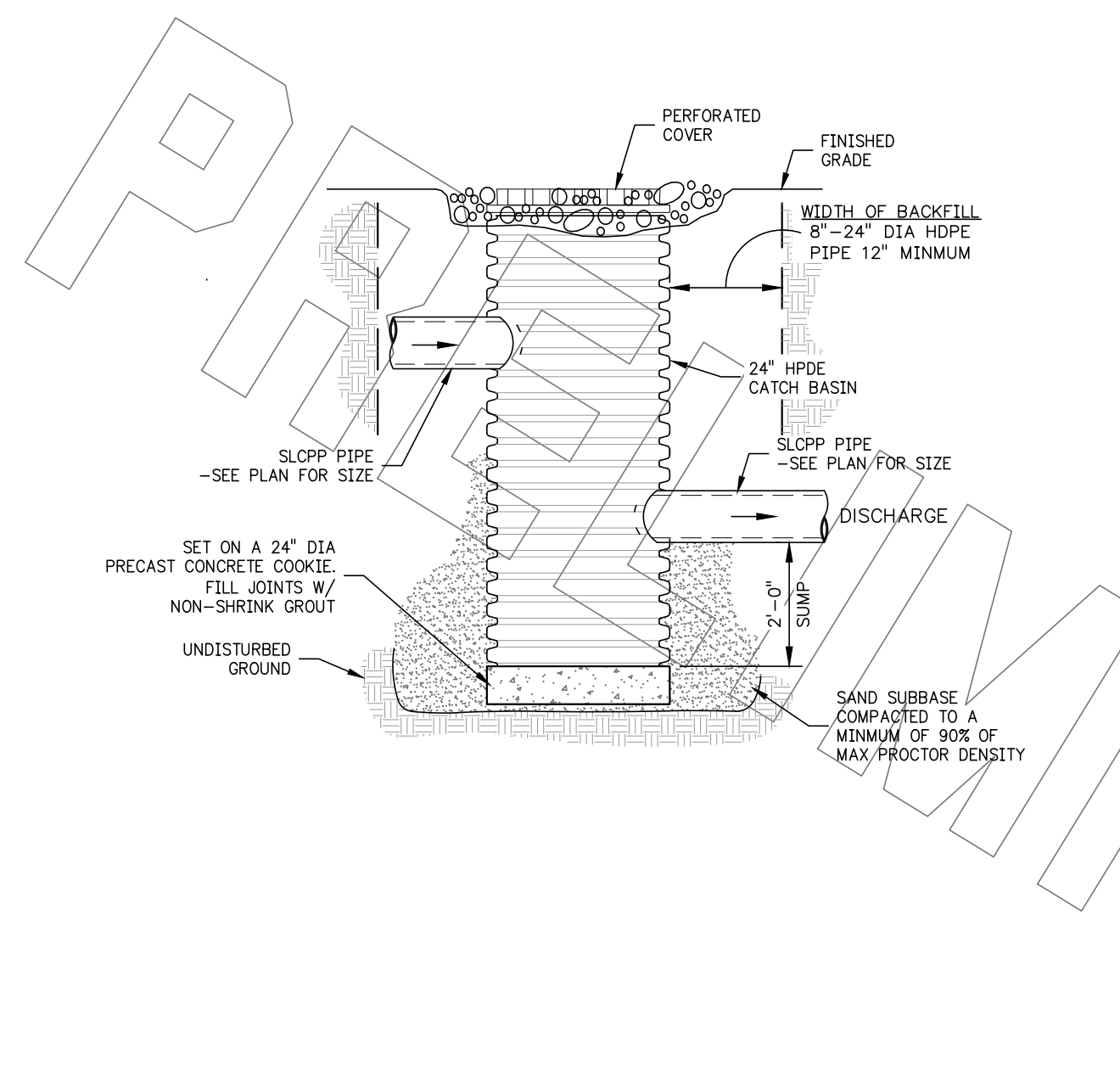
BUTT JOINT DETAIL N.T.S. 12

ON 22x34 SHEET SCALE: FULL (AS NOTED)
 ON 11x17 SHEET SCALE: HALF

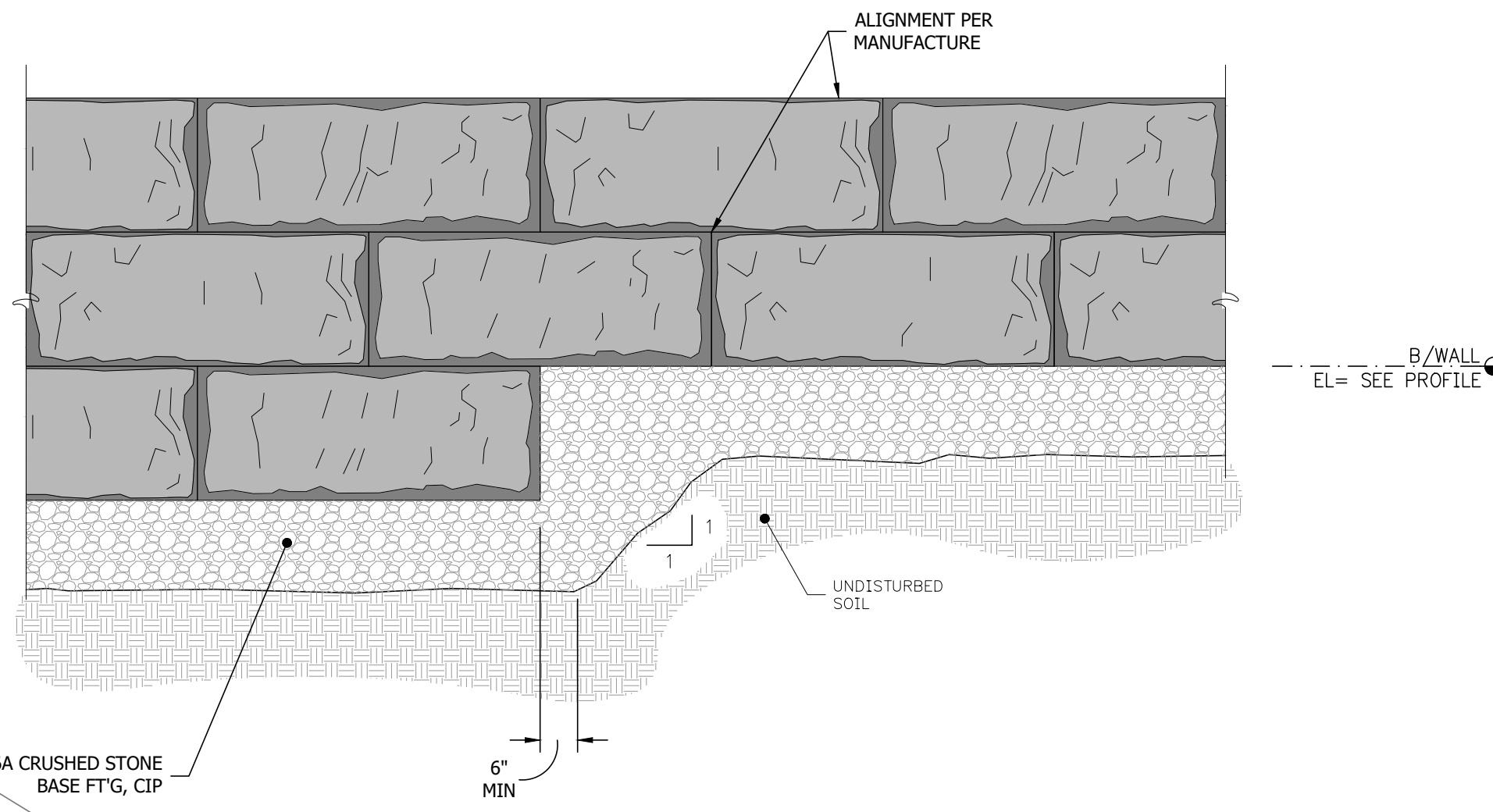
REV	DESCRIPTION	DATE
A	REVIEW 50% DESIGN	KAS/09/23
B	DESIGN PERMIT REVIEW	KAS/09/23
C	REVIEW 75% DESIGN	KAS/09/23

REVISION: 10/18/2023
 DATE ISSUED: 10/18/2023
 ISSUE PHASE: REVIEW - 75% DESIGN
 PROJECT TITLE: GRAND HOTEL EARTH RETENTION SYSTEM

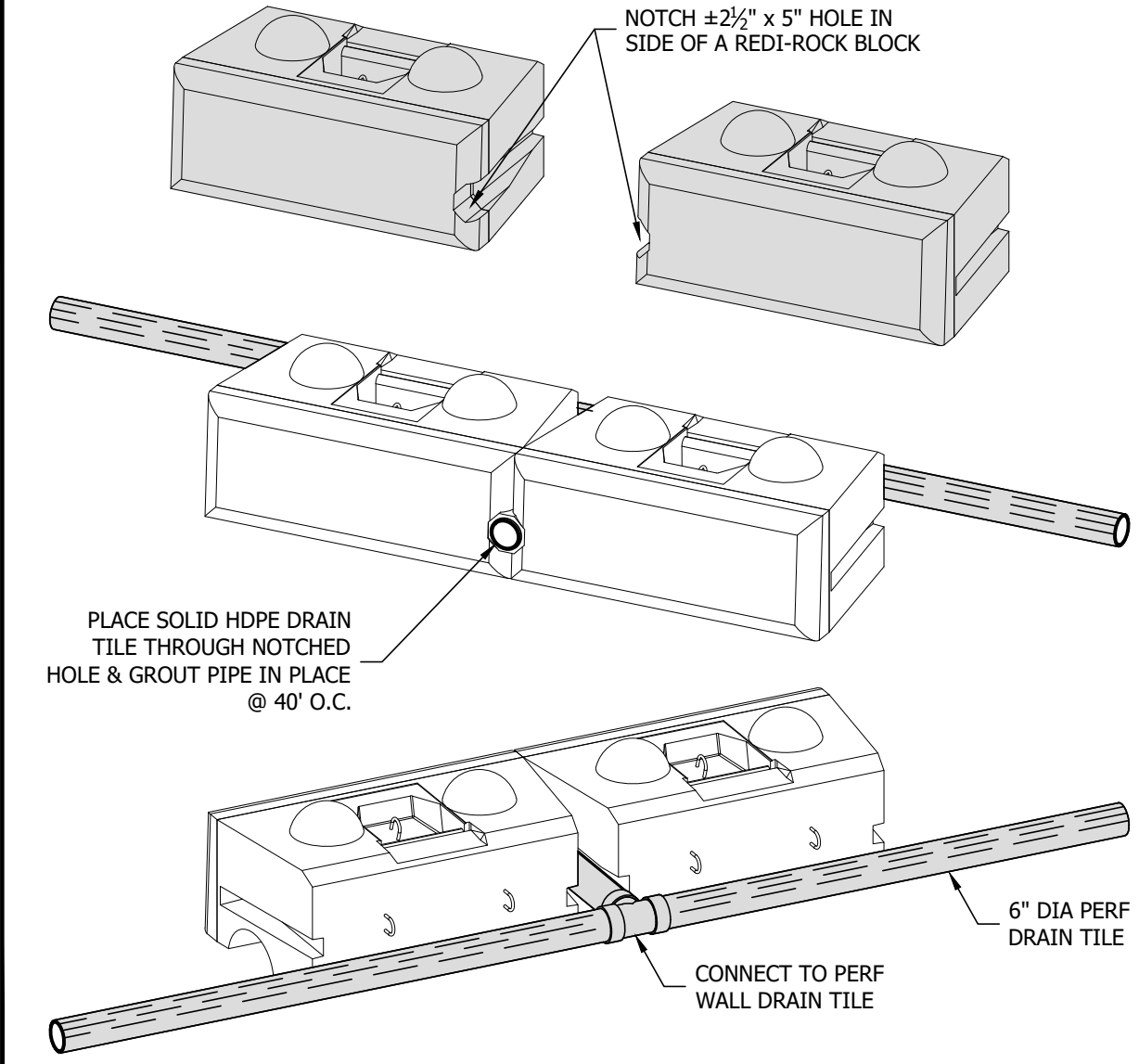
CLIENT: POWER CONSTRUCTION
 PROJECT LOCATION: CITY OF MACKINAC ISLAND, MI
 SHEET TITLE: CONSTRUCTION DETAILS



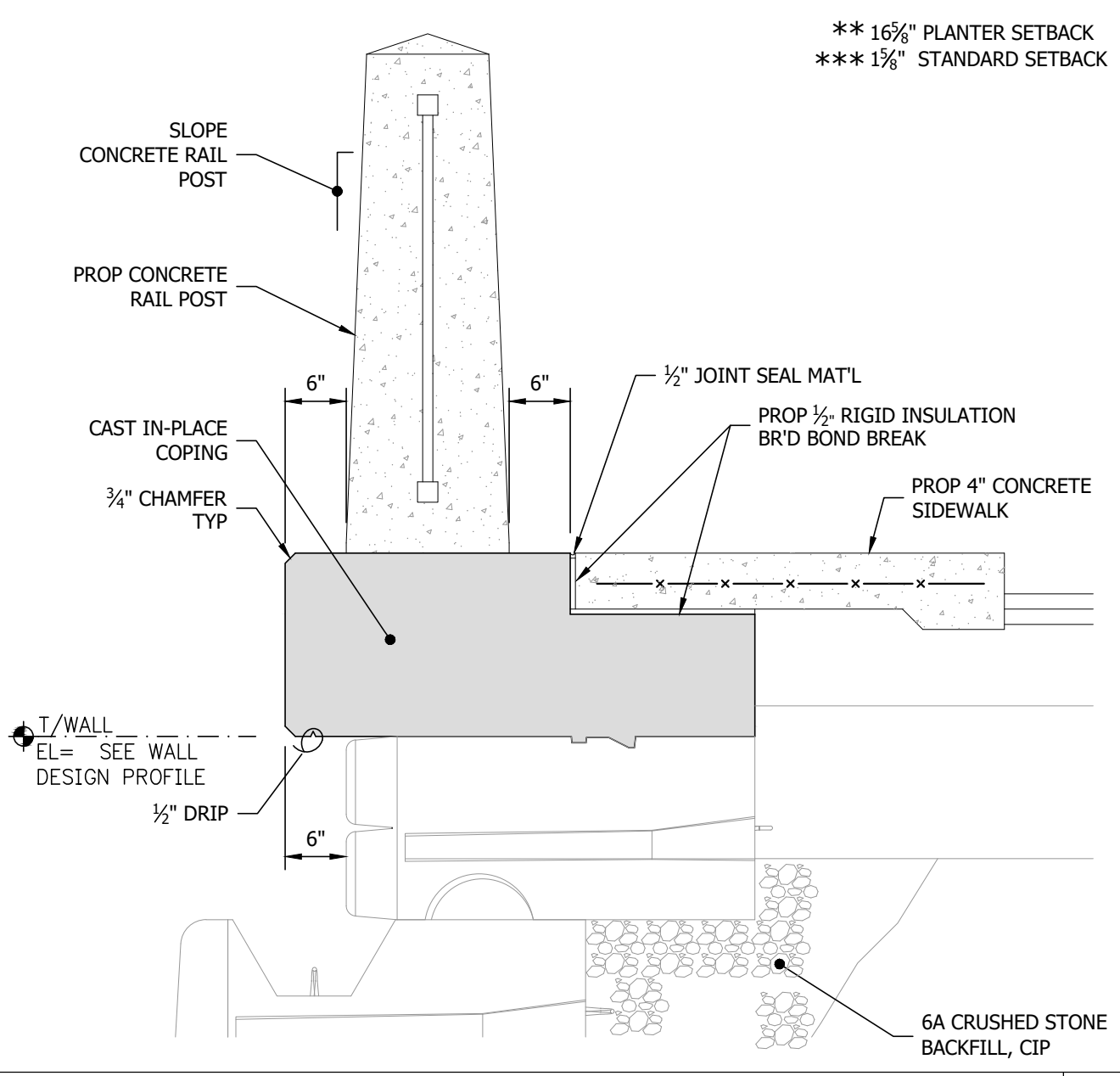
2' DIA CATCH BASIN W/SUMP N.T.S. 1



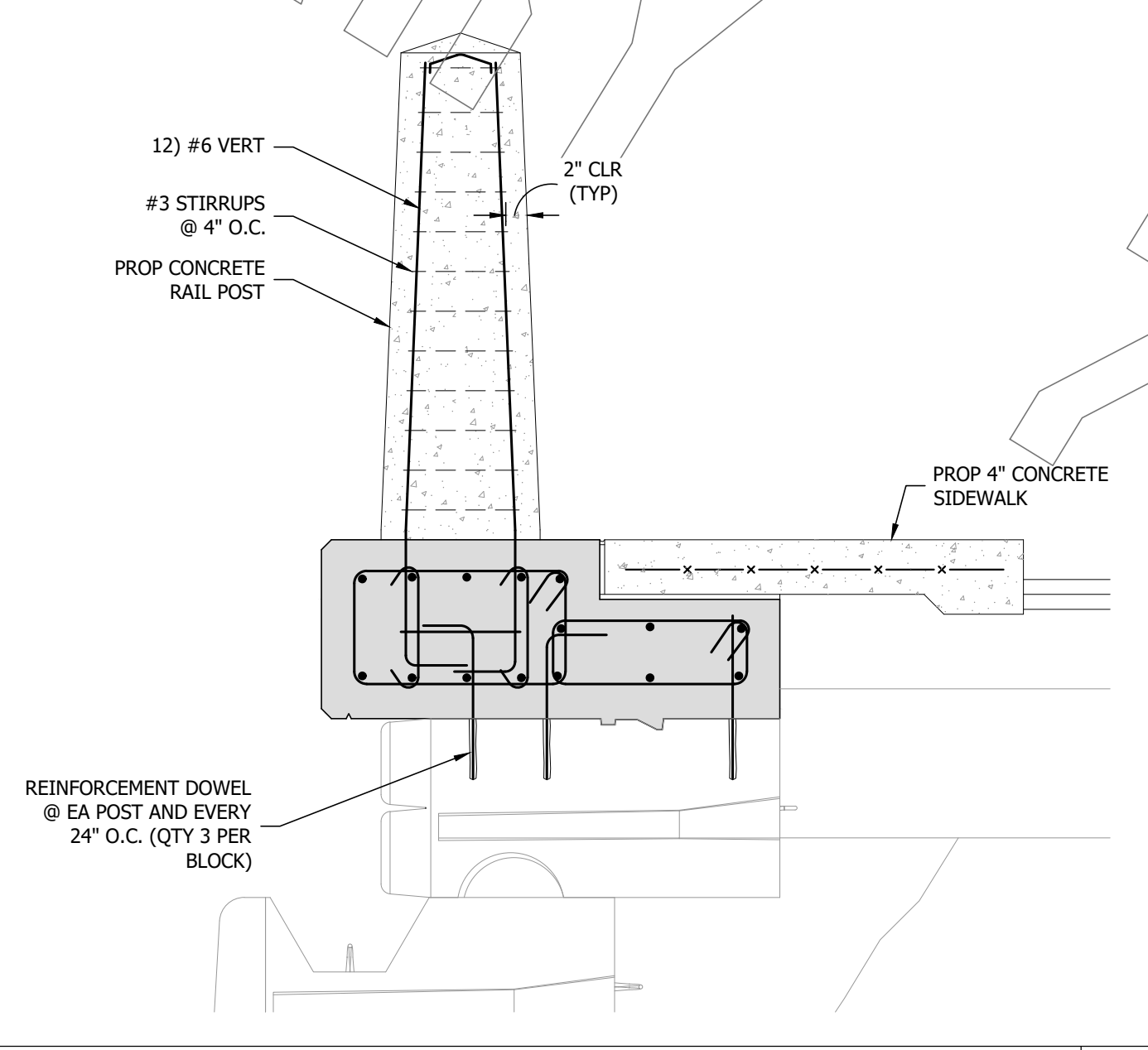
STEP FOOTING DETAIL N.T.S. 3



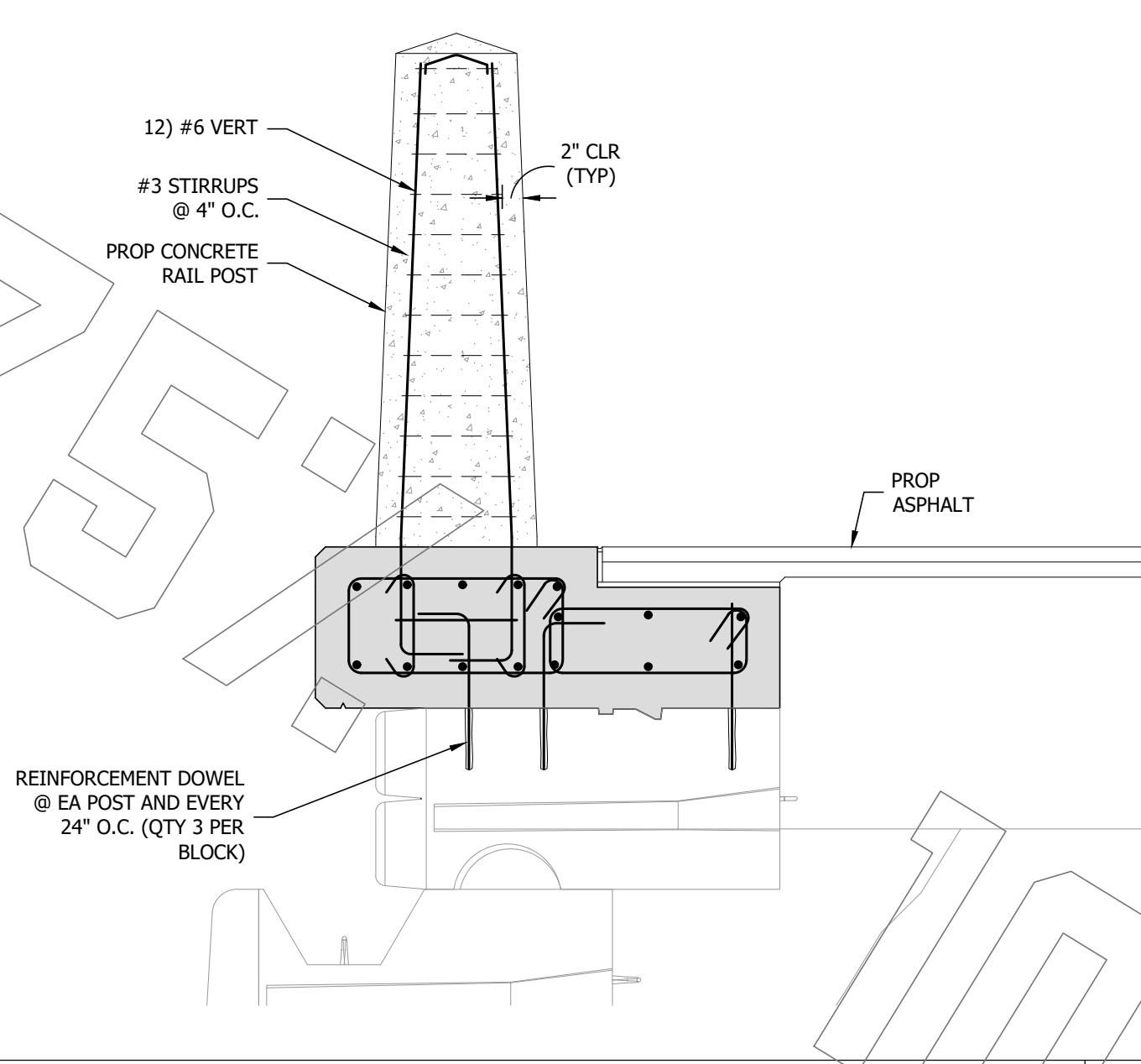
DETAIL N.T.S. 4



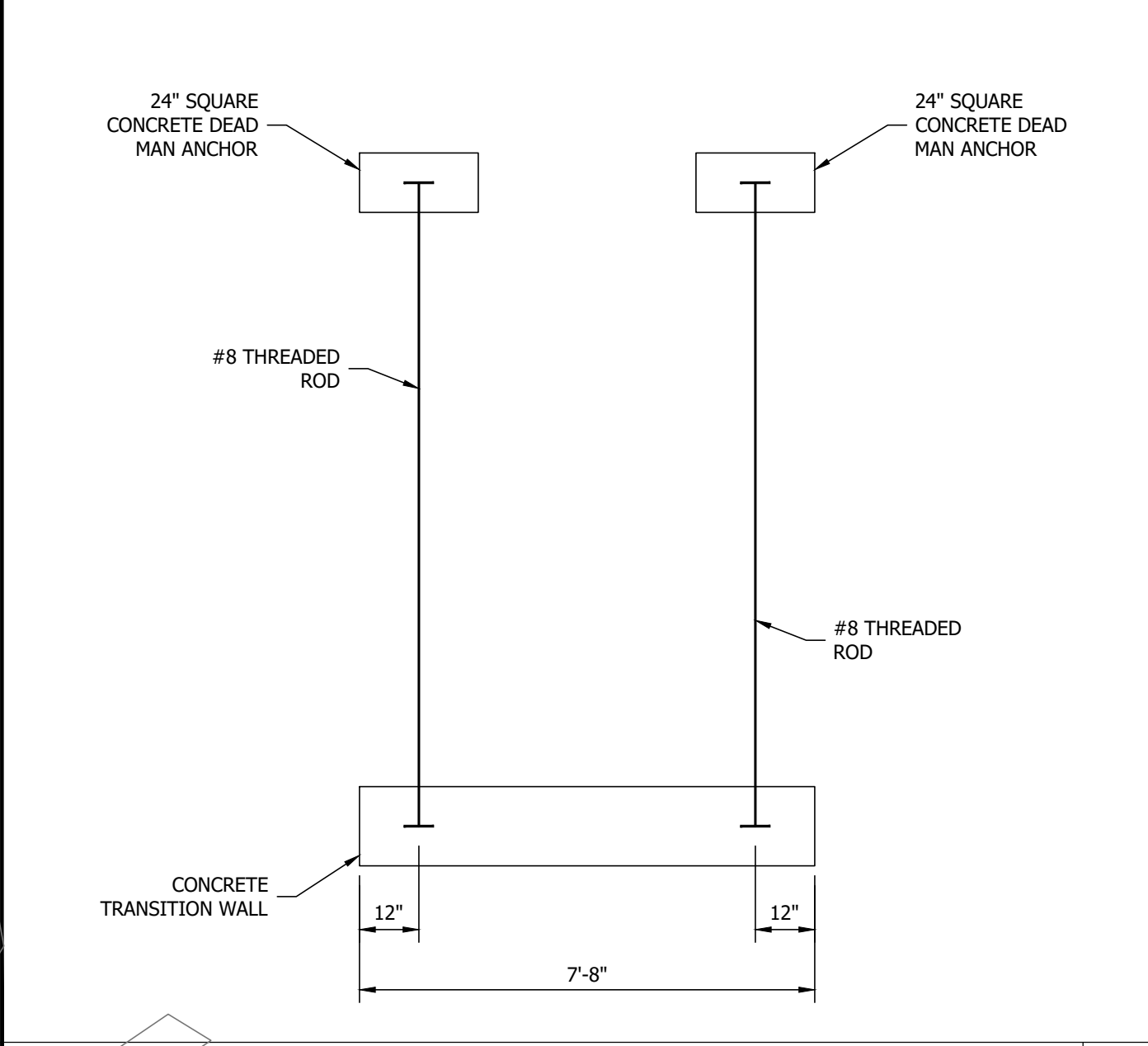
CONCRETE WALL CAP N.T.S. 5



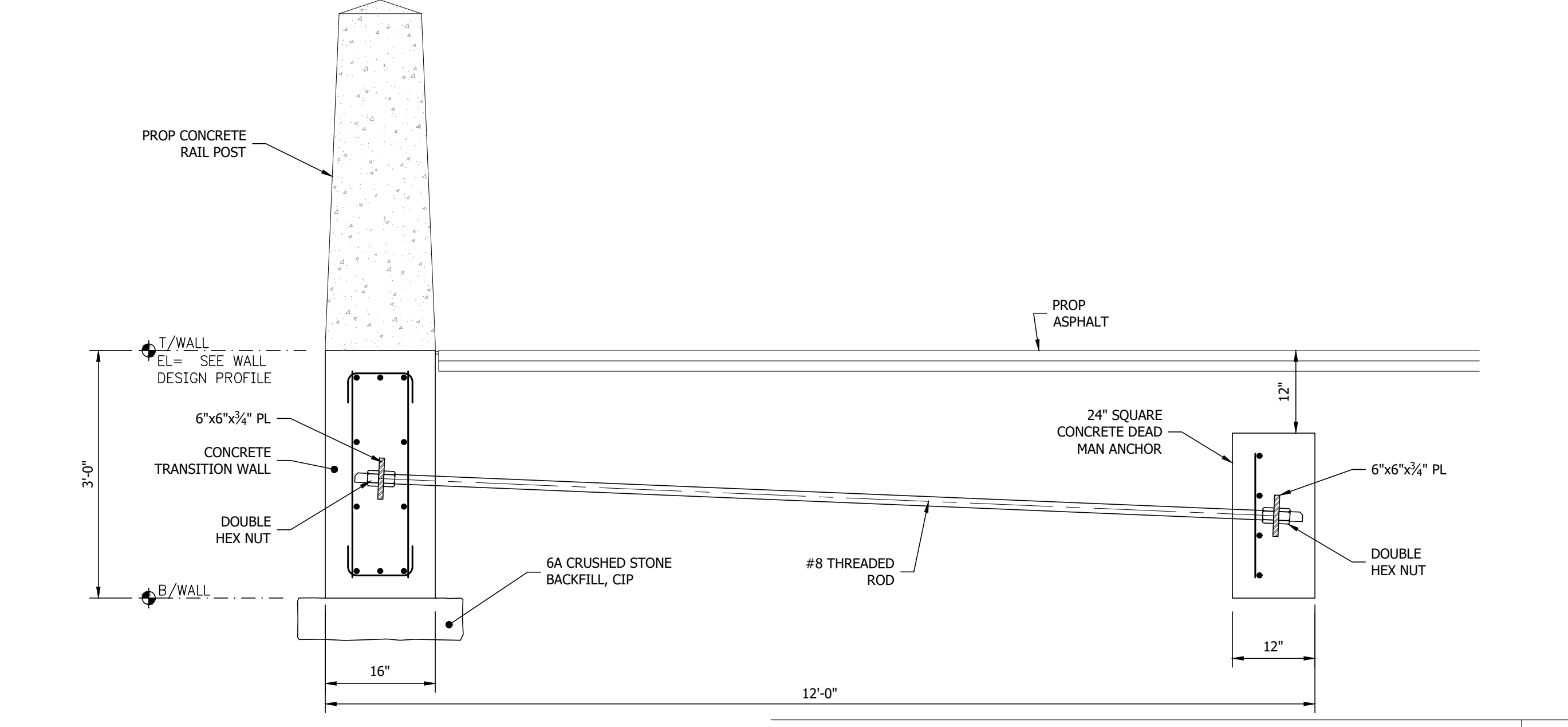
TYPICAL REINFORCMENT WALL CAP W/ SIDEWALK N.T.S. 6



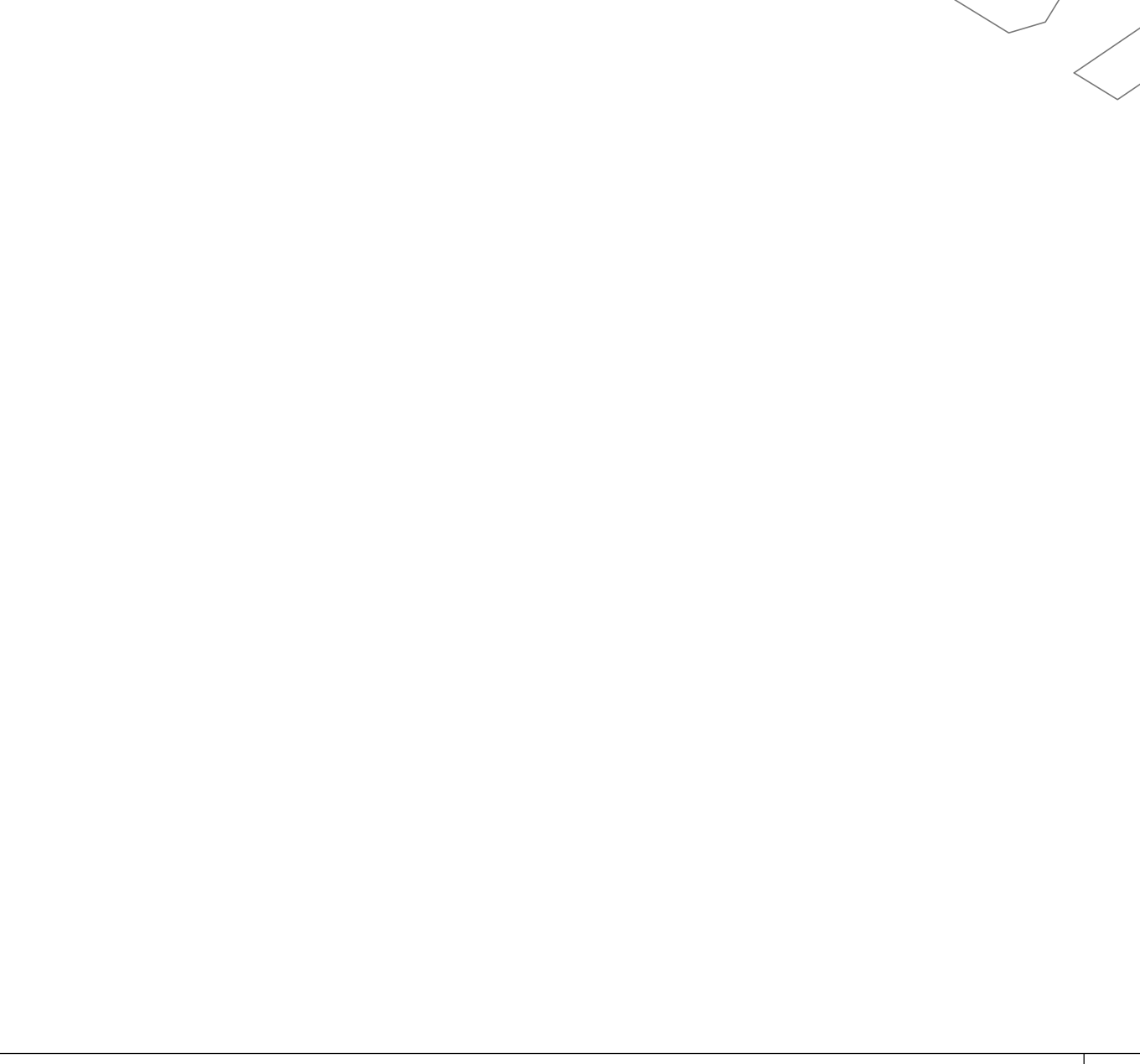
TYPICAL WALL CAP N.T.S. 7



TRANSITION WALL AND CONCRETE PIER LAYOUT N.T.S. 8



DETAIL N.T.S. 10



NOT USED N.T.S. 11



NOT USED N.T.S. 12

ON 22x34 SHEET SCALE: FULL (AS NOTED)
ON 11x17 SHEET SCALE: HALF

REV	DESCRIPTION	DATE
A	REVIEW 50% DESIGN	KAS/09/23
B	DESIGN PER CLIENT REVIEW	KAS/10/23
C	REVIEW 75% DESIGN	KAS/10/23

REVISION
DATE ISSUED: 10/18/2023
ISSUE PHASE: REVIEW - 75% DESIGN
PROJECT TITLE:

**GRAND HOTEL
EARTH
RETENSION
SYSTEM**

CLIENT:
POWER CONSTRUCTION

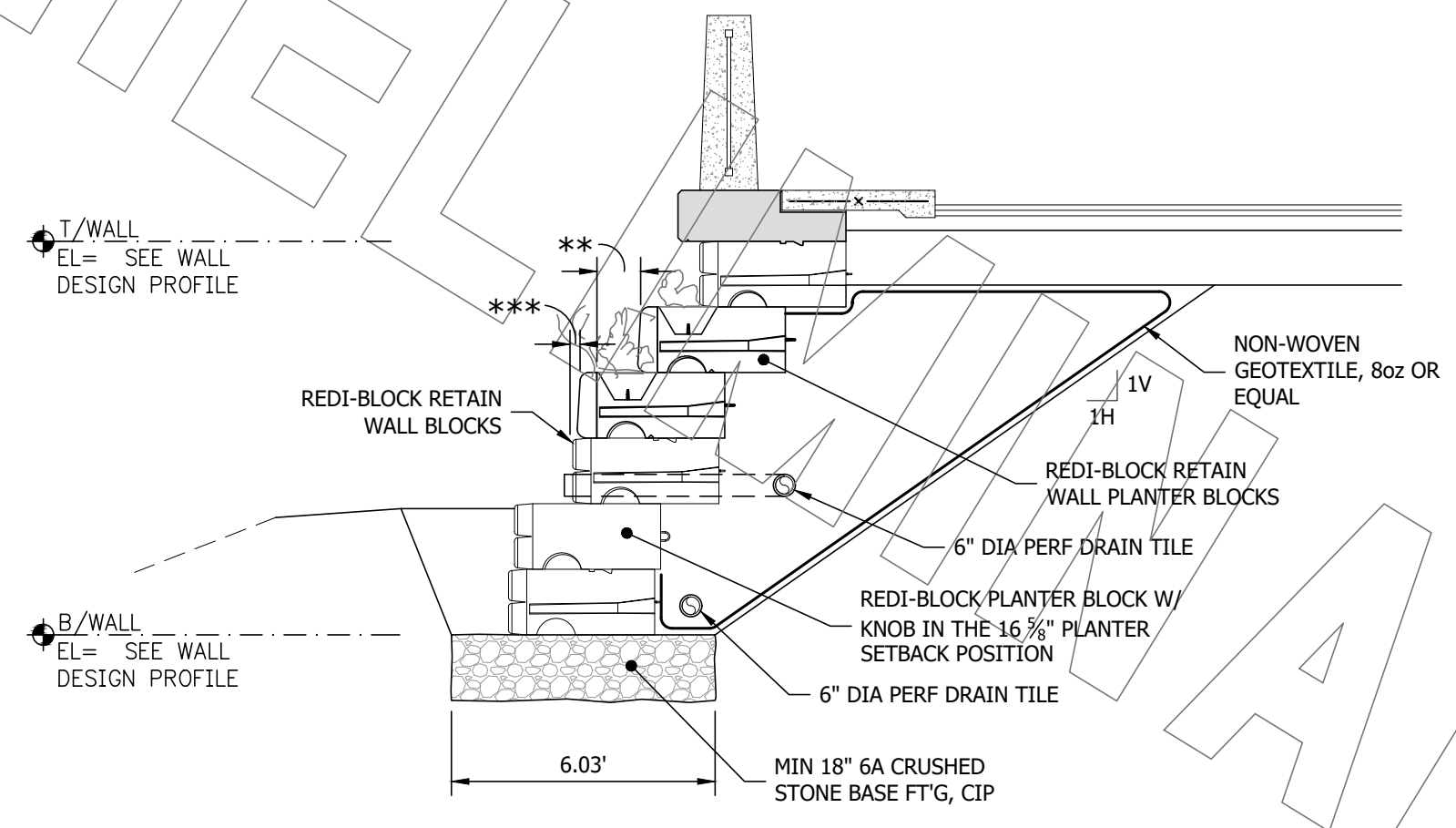
PROJECT LOCATION:
CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
CONSTRUCTION
DETAILS

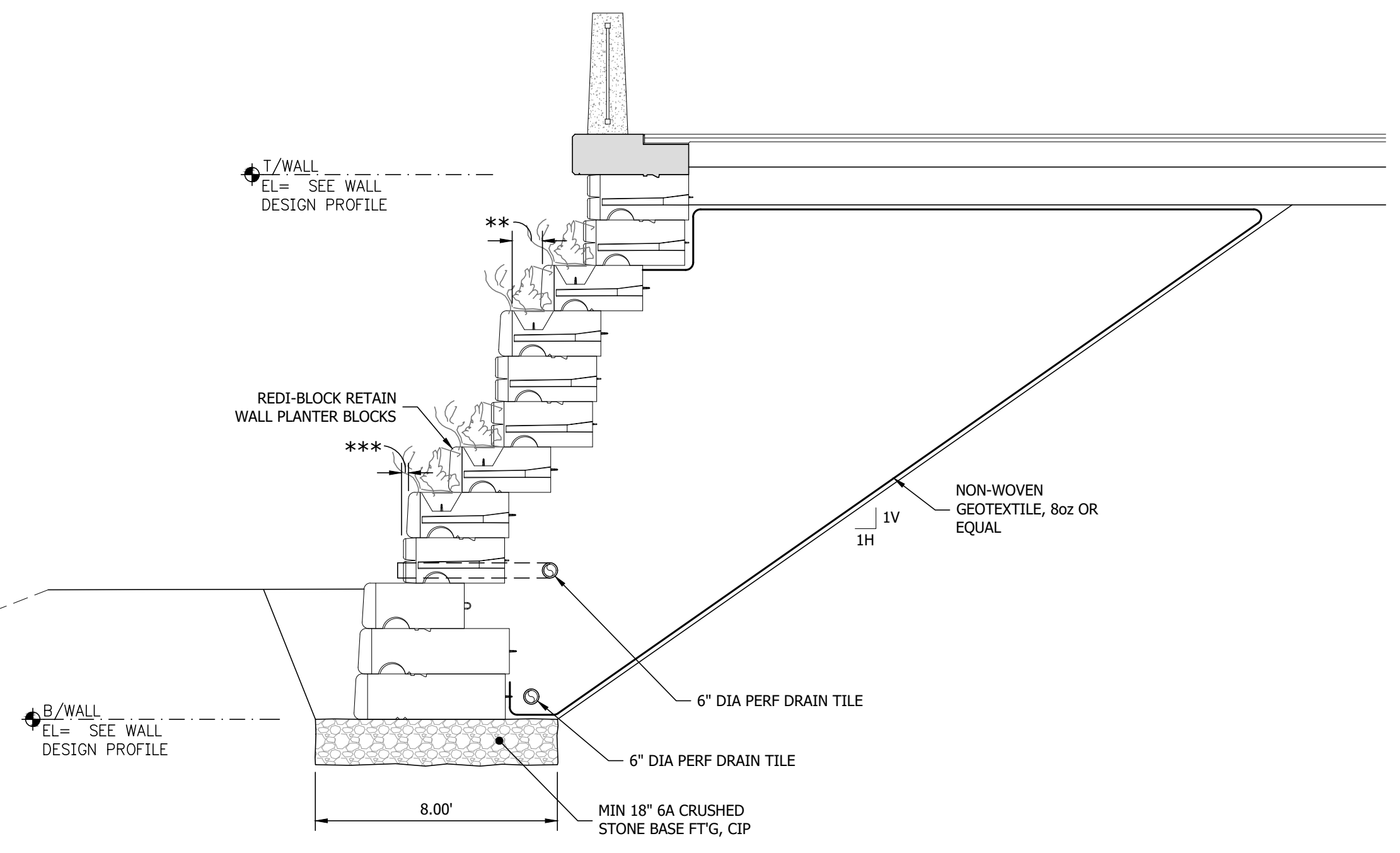
PROJECT NUMBER: 23142
SHEET NUMBER: C5.1

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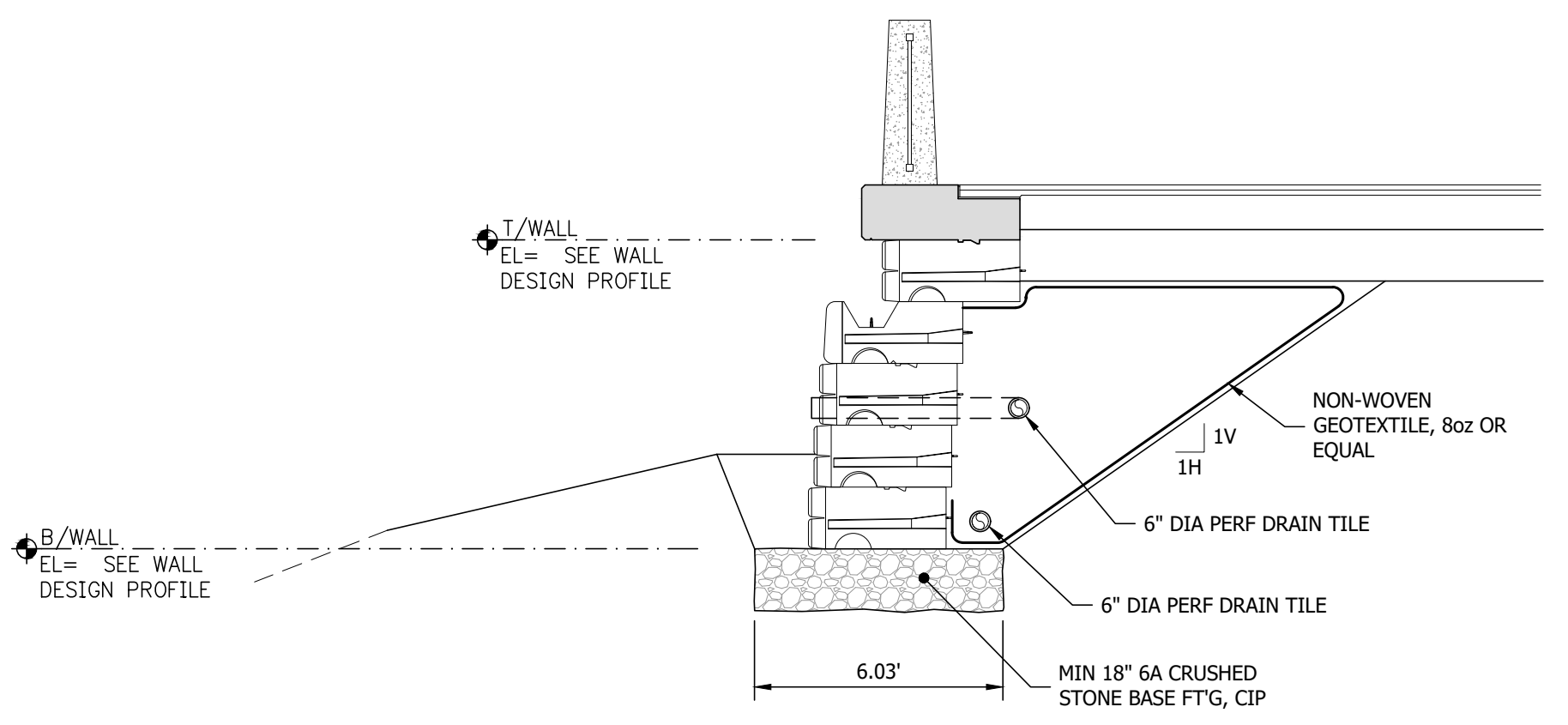
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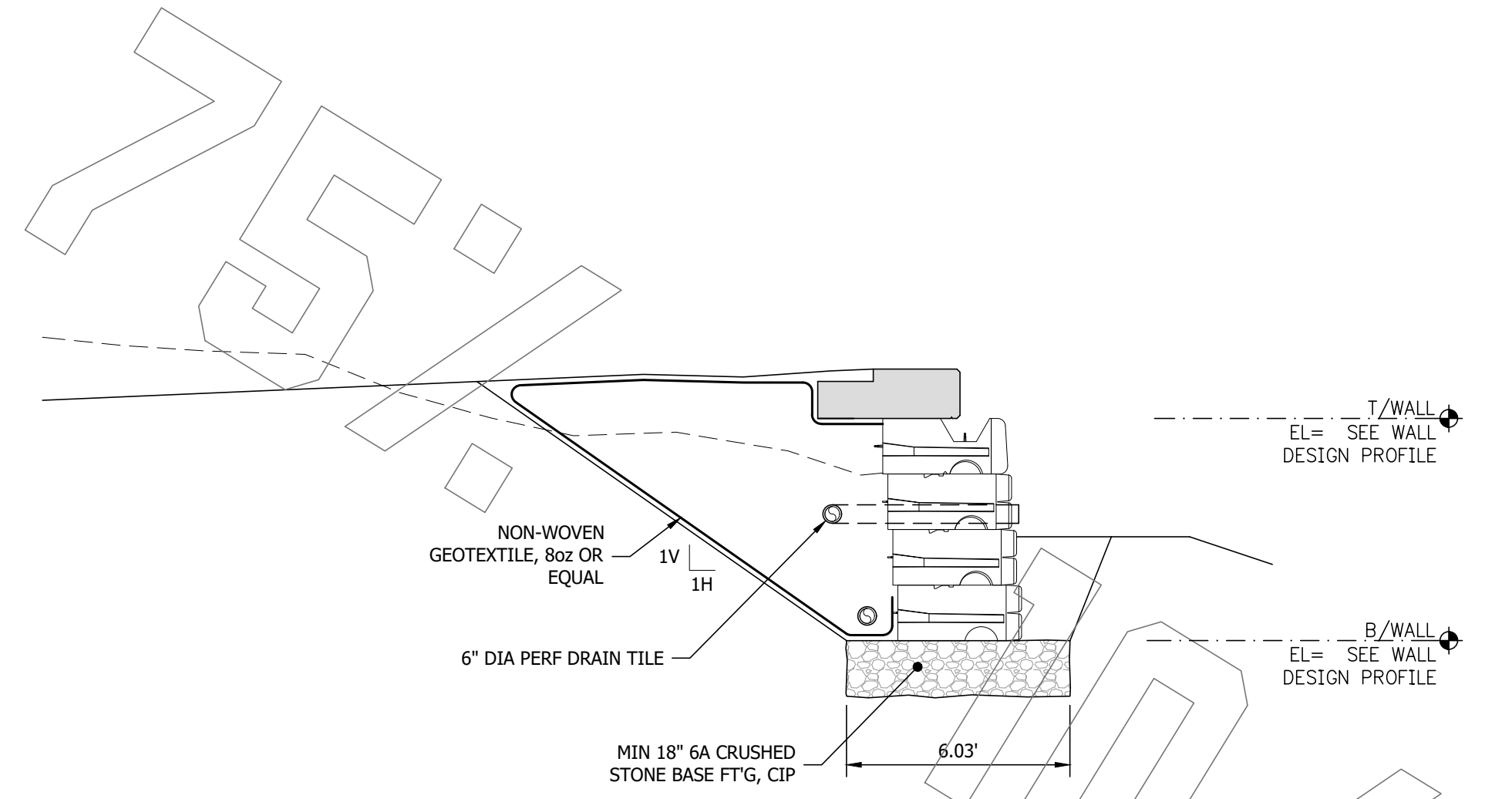
1
C5.2 WALL SECTION 'A'
Scale: 1"=4'-0"
16 3/4" PLANTER SETBACK
1 3/8" STANDARD SETBACK



2
C5.2 WALL SECTION 'B'
Scale: 1"=4'-0"
16 3/4" PLANTER SETBACK
1 3/8" STANDARD SETBACK



3
C5.2 WALL SECTION 'C'
Scale: 1"=4'-0"
16 3/4" PLANTER SETBACK
1 3/8" STANDARD SETBACK



4
C5.2 WALL SECTION 'D'
Scale: 1"=4'-0"
16 3/4" PLANTER SETBACK
1 3/8" STANDARD SETBACK

ON 22x34 SHEET SCALE: FULL (AS NOTED)
ON 11x17 SHEET SCALE: HALF

REV#	DESCRIPTION	DATE
A	REVIEW - 75% DESIGN	10/18/2023
B	DESIGNED FOR CLIENT REVIEW	10/18/2023
C	REVIEW - 75% DESIGN	10/18/2023

REVISION: _____
DATE ISSUED: 10/18/2023
ISSUE PHASE: REVIEW - 75% DESIGN

PROJECT TITLE:
**GRAND HOTEL
EARTH
RETENSION
SYSTEM**

CLIENT:
POWER CONSTRUCTION

PROJECT LOCATION:
CITY OF MACKINAC ISLAND, MI

SHEET TITLE:
CONSTRUCTION
DETAILS

PROJECT NUMBER: 23142
SHEET NUMBER: C5.2