



**ADDENDUM NO. 2**  
**LUCCHESI TURF FIELD REPLACEMENT**

**C14502008**

**July 18, 2025**

This Addendum No. 2 modifies the bidding documents for the **LUCCHESI TURF FIELD REPLACEMENT** Project. This Addendum shall become part of the Contract and all provisions of the Contract shall apply thereto. Bidders shall acknowledge all Addendums in the Bid Schedule.

**Contract Document Modification:**

1. **Plan Set: Replace existing sheets L3.0, L4.0, L5.0, L6.0, and LD1.0 with the attached revised sheets bearing the same sheet numbers. These revised sheets are identified on the plans with Revision Delta 1, titled “Addendum 2”, and dated 07/09/2025.**
  - a. **Note: Bid Schedule Item #27, “Water Meter”, has been removed from the project plans. See Contract Document Modification #2, below.**
2. **Bid Schedule: Replace the existing bid schedule with the revised bid schedule, attached as “Attachment 2.1, Revised Bid Schedule, 7/17/2025”. Modifications noted in red.**
3. **Technical Specifications: Replace Section “33 40 00, Storm Drainage Utilities” with the revised Technical Specification bearing the same name, attached as “Attachment 2.2”.**
  - a. **Note: Revised Technical Specification 33 40 00, Storm Drainage Utilities has been revised to include specifications for material at French Drain.**

**Page 1 of 4**

**MAYOR / ALCALDE**

Kevin McDonnell

**COUNCILMEMBERS / MIEMBROS DEL CONSEJO**

Janice Cader Thompson, Dist. 1  
John Shribbs, Dist. 2  
Karen Nau, Dist. 3

Frank Quint, Dist. 4  
Alex DeCarli, Dist. 5  
Brian Barnacle, Dist. 6

## **Bidder's Questions & City's Response:**

**1. Is there an Engineer's Estimate?**

Response: The Engineer's Estimate for the project (NOT INCLUDING City-Furnished Turf Materials): \$521,054.87

Cost of City-Furnished Turf Materials (for reference only): \$722,848.00

**2. Demo Sheet L3.0 show to, "Remove existing permeable rock base, subdrain rock and existing pipe, and replace with new per Detail A, Sheet LD1.0 and Sheet L5.0. Can you confirm the existing inverts match the proposed and that the existing trench prism should theoretically match existing?"**

Response: New pipe inverts will be as shown on L5.0. The new pipe for the base bid work will connect into a new Junction box as shown on L5.0. Existing pipe that is to remain (unless replaced as part of the bid alternate) will not have their inverts modified and shall be connected to the new junctions.

**3. Follow up to the above question, Bid Item 4 – Rock/Pipe Removal at Existing Perimeter Drains is for a quantity of 80 CY. If this existing trench dimensions are close to the proposed, this quantity seems significantly low.**

Response: Revise to 481 tons of rock. Refer to "Attachment 2.1, Revised Bid Schedule, 7/17/2025" item No. 4.

**4. No bid item is provided for Traffic Control. How is this to be compensated?**

Response: "Traffic Control" has been added to the bid schedule. Refer to "Attachment 2.1, Revised Bid Schedule, 7/17/2025" item No. 50.

**5. Spec Section 01 50 00 Part 2.03 details a contractor's field office. Is contractor required to have a field office?**

Response: A field office is not required.

**6. In Section 00 73 04 - COORDINATION REQUIREMENTS , "INSTALLATION OF CMAS TURF MATERIALS ... In addition, the CONTRACTOR shall ensure the installer possesses a California D-12" Can a C-27 license be substituted for D-12?**

Response: D-12 requirement for turf installer cannot be substituted

**7. Are we absolutely required to recycle/reuse the existing field turf?**

Response: Yes, existing turf shall be recycled per the demolition specifications. Refer to Technical Specifications, Section 02 41 13, 3.06 Synthetic Turf Recycling.



**8. Please confirm the new turf being purchased has striping included already.**

Response: Confirmed, turf purchased by the City includes striping.

**9. Please confirm staking and layout is responsibility of Contractor.**

Response: Confirmed, the Contractor is responsible for staking and layout.

**10. Is the drinking fountain already purchased?**

Response: No, the Contractor will purchase the drinking fountain.

**11. Is the Contractor or City responsible for QSP/QSD inspections and reporting?**

**Response: QSP/QSD inspections and reporting are not required for this project.**

Response: Refer to Technical Specifications 01 57 23 Storm Water Pollution Prevention Plan and Erosion and Sediment Control Plan. While a SWPPP plan is not required for this project, SWPPP BMPs specified shall be the responsibility of the Contractor. Refer to Plan Set, Sheet L2.0, Erosion & Sediment Control Plan.

**12. Please confirm testing of base material being removed is Contractor responsibility.**

Response: Yes, any testing of existing material is the responsibility of the contractor. Refer to Geotech report for information on the existing materials on site.

**13. If all bids are higher than the Engineer's Estimate, will the project be cancelled?**

Response: No, it is not necessarily guaranteed that the project will be cancelled, however, it is a possibility.

**14. Many of the Turf Recycling vendors are stating CA is “forcing new recycle laws into play that will soon prohibit anyone from repurposing infill turf.” How should we quote the project - to recycle or to send to dump?**

Response: Turf and infill are required to be recycled. Refer to Technical Specifications, Section 02 41 13, 3.06 Synthetic Turf Recycling.

**15. Is a site visit required?**

Response: Yes, a site visit is required and a site visit affidavit is required as part of the bid package.

**16. Is FieldTurf installing the turf?**

Response: FieldTurf is supplying the turf, shock pad, and infill, purchased by the City. The Contractor shall coordinate the delivery of the turf with FieldTurf, and the Contractor is responsible for installing the turf.

**17. What are the PLA, DBE, or local hiring requirements?**

Response: The City requires the Contractor and Subcontractors to be registered with the Department of Industrial Relations (DIR) and have a DIR Contractor Number. The City



requires prevailing wages, however, there are no PLA, DBE, or local hiring requirements for this project. Refer to Petaluma Municipal Code: <https://petaluma.municipal.codes/Code/4.04.080>

**18. Clarify the location of the thickened edge for the new concrete.**

Response: The thickened edge detail for the new concrete is applicable only at the locations identified as Item #11 in the Material Legend on Sheet L6.0. No other areas require a thickened edge unless explicitly noted. The Bid Schedule quantity has been revised to 122 linear feet.

City of Petaluma,



Nate Luna, PMP  
Project Manager



**A signed copy of this Addendum and the attached acknowledgement form shall be attached to the proposal. Failure to do so may cause rejection of your proposal.**

**ADDENDUM NO. 2**

**LUCCHESI TURF FIELD REPLACEMENT**

**ACKNOWLEDGEMENT**

Receipt of Addendum No. 2 is hereby acknowledged by \_\_\_\_\_  
(Contractor's Name)

on the \_\_\_\_\_ day of \_\_\_\_\_, 2025.

By: \_\_\_\_\_

Signature

\_\_\_\_\_

Title

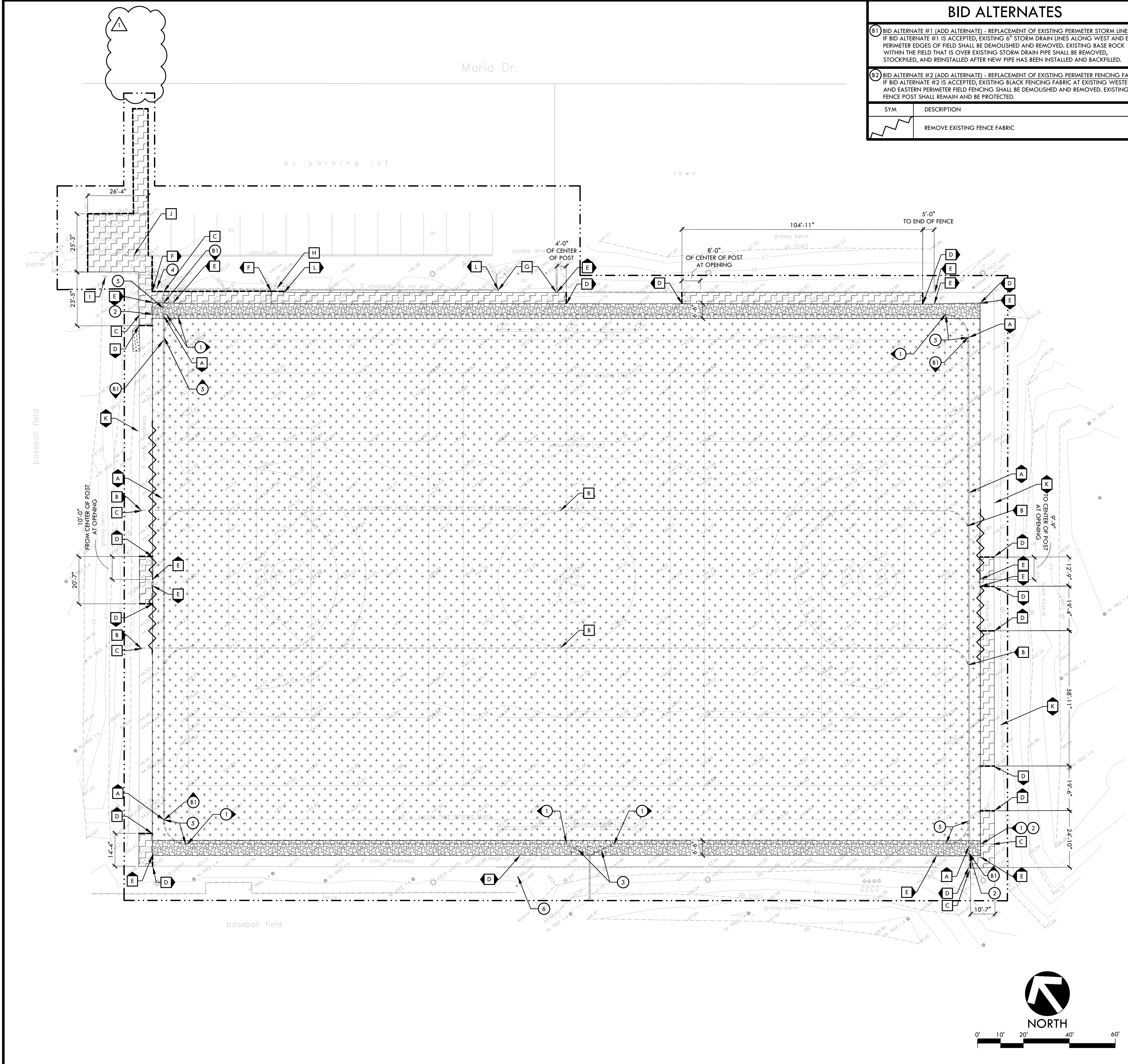
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Company





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BID ALTERNATES	
<b>B1</b> BID ALTERNATE #1 (ADD ALTERNATE) - REPLACEMENT OF EXISTING PERIMETER STORM LINES IF BID ALTERNATE #1 IS ACCEPTED, EXISTING 6" STORM DRAIN LINES ALONG WEST AND EAST PERIMETER EDGES OF FIELD SHALL BE DEMOLISHED AND REMOVED. EXISTING BASE ROCK WITHIN THE FIELD THAT IS OVER EXISTING STORM DRAIN PIPE SHALL BE REMOVED, STOCKPILED, AND REINSTALLED AFTER NEW PIPE HAS BEEN INSTALLED AND BACKFILLED.	
<b>B2</b> BID ALTERNATE #2 (ADD ALTERNATE) - REPLACEMENT OF EXISTING PERIMETER FENCING FABRIC IF BID ALTERNATE #2 IS ACCEPTED, EXISTING BLACK FENCING FABRIC AT EXISTING WESTERN AND EASTERN PERIMETER FIELD FENCING SHALL BE DEMOLISHED AND REMOVED. EXISTING FENCE POST SHALL REMAIN AND BE PROTECTED.	
SYM	DESCRIPTION
	REMOVE EXISTING FENCE FABRIC

- ### DEMOLITION NOTES
- THE CONTRACTOR SHALL PERFORM ALL CLEARING, DEMOLITION, REMOVAL OF OBSTRUCTIONS AND SITE PREPARATIONS NECESSARY FOR THE PROPER EXECUTION OF ALL WORK CONTAINED IN THE CONTRACT DOCUMENTS.
  - CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND PROVIDE THE REQUIRED COORDINATION FOR THEIR TEMPORARY DISCONNECTION, PROTECTION, REMOVAL AND/OR STORAGE AS MAY BE REQUIRED DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE WHETHER TEMPORARY SERVICES ARE NECESSARY.
  - THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID SUBMITTAL TO DETERMINE THE EXACT EXTENT AND DEPTH OF SITE DEMOLITION REQUIRED AND VERIFY COMPLIANCE WITH DRAWINGS. THE OWNER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
  - THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES SHOWN IN THE CONTRACT DOCUMENTS SHALL BE DEEMED TO BE APPROXIMATIONS ONLY. ALL DISCREPANCIES BETWEEN WHAT IS SHOWN AND THE ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) AT (800) 227-2600 PRIOR TO ANY DEMOLITION OR EXCAVATION. UPON COMPLETION OF USA MARKING OPERATIONS, CONTRACTOR SHALL RECORD ALL UTILITY MARKINGS ON A SEPARATE SET OF DRAWINGS. THIS SET SHALL BE KEPT ON-SITE FOR REFERENCE FOR DURATION OF CONTRACT. NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY SHOULD CONFLICTS ARISE AND REDIRECT WORK TO AVOID DELAY.
  - ALL EXISTING ITEMS ARE TO REMAIN UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING, AT CONTRACTOR'S EXPENSE, ANY EXISTING ITEM DAMAGED OR DESTROYED BY CONSTRUCTION OPERATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY AND ALL DAMAGES TO ADJACENT PROPERTIES. THE DAMAGED ITEMS SHALL BE RESTORED TO AN "AS-WAS" OR BETTER CONDITION OR REPLACED PER THE DISCRETION OF THE OWNER'S REPRESENTATIVE.
  - PRIOR TO ANY DEMOLITION WORK, CONTRACTOR SHALL INSTALL SELF-SUPPORTING INTERLOCKING CHAIN-LINK TEMPORARY CONSTRUCTION FENCING TO ENCLOSE AND SECURE THE PROJECT AREA LIMIT OF WORK. THE FENCING SHALL CONTAIN PEDESTRIAN AND/OR VEHICULAR ACCESS GATES AS NECESSARY AND SHALL BE MINIMUM 6 FEET HIGH WITH A TOP AND BOTTOM RAIL WITH KNUCKLED TOP AND BOTTOM SELVAGE (NO BARBED WIRE PERMITTED). ALL FENCE SHALL INCLUDE FULL HEIGHT SCREEN SHADE CLOTH COVERING. THE CONSTRUCTION FENCING WORK SHALL BE SUBJECT TO THE DISCRETION OF THE OWNER'S REPRESENTATIVE.
  - CONTRACTOR SHALL VIDEO EXISTING/REMAINING STORM DRAINAGE LINES WITHIN THE FIELD AND RELAY INFORMATION ON CONDITIONS OF THE EXISTING LINES TO THE OWNER'S REPRESENTATIVE.
  - CONTRACTOR SHALL FOLLOW THE CITY OF PETALUMA'S CONSTRUCTION WASTE MANAGEMENT PLAN. ADDITIONAL INFORMATION AND FORM CAN BE FOUND AT [HTTPS://CITYOFPETALUMA.ORG/DOCUMENTS/CONSTRUCTION-DEMOLITION-DEBRIS-RECYCLING-FORM/](https://cityofpetaluma.org/documents/construction-demolition-debris-recycling-form/).

DEMOLITION LEGEND	
SYM	DESCRIPTION
	LIMIT OF WORK / CONSTRUCTION FENCING
	EXISTING SYNTHETIC TURF, AND ASSOCIATED INFILL MATERIAL, SHALL BE REMOVED AND RECYCLED PER SPECIFICATIONS. CONTRACTOR SHALL PERFORMED STRIP LINGING OF THE EXISTING FIELD BASE TO ENSURE BASE IS WITHIN CONFORMANCE STANDARDS SET WITHIN SPECIFICATIONS. ANY LOCATIONS FOUND TO BE OUT OF CONFORMANCE SHALL BE CORRECTED. CONTRACTOR SHALL LOOK AT ALTERNATE MEANS OF DISPOSAL OF SYNTHETIC TURF MATERIAL.
	CONTRACTOR SHALL REMOVE EXISTING PERMEABLE ROCK BASE, SUBDRAIN ROCK AND EXISTING PIPE, AND REPLACE WITH NEW SUBDRAIN TRENCH ROCK AND PIPE, REFER TO DETAIL A, SHEET LD1.0 AND SHEET LS.0 FOR ADDITIONAL INFORMATION.
	EXISTING HARDSCAPE PAVING, INCLUDING BASE MATERIALS AND HEADER BOARDS, TO BE DEMOLISHED AND REMOVED.
	CLEAR AND GRUB EXISTING VEGETATED AREA. EXISTING NATIVE MATERIAL TO BE CLEAR AND STRIPPED. STRIPPED MATERIAL TO BE OFF HAULED.
	SAWCUT EXISTING HARDSCAPE. WHEN SAWCUTTING OCCURS AT CONCRETE PAVING, SAWCUT SHALL BE MADE AT THE NEAREST CONCRETE JOINT.

DEMOLITION ITEMS	
ITEMS TO BE DEMOLISHED AND/OR REMOVED	
	PERFORATED SUBDRAIN LINE TO BE DEMOLISHED AND REMOVED
	EXISTING STORM DRAIN CONNECTED TO CLEANOUT THAT GOES UNDER EXISTING PAVEMENT, SHALL BE CUT AND CAPPED AT EXISTING PAVEMENT EDGE AT LOCATIONS WHERE NEW JUNCTION BOXES WILL BE INSTALLED.
	CONTRACTOR SHALL CUT AND DEMOLISH EXISTING STORM LINE AS NEEDED TO INSTALL NEW DRAINAGE STRUCTURE, REFER TO SHEET LS.0 FOR ADDITIONAL INFORMATION.
	EXISTING DRINKING FOUNTAIN TO BE REMOVED. CONTRACTOR SHALL CUT AND CAP WATERLINE AND OTHER UTILITIES CONNECTED TO FOUNTAIN. CONTRACTOR SHALL ALSO GRIND DOWN ANY EXPOSED BASE HARDWARE (BOLTS, ANCHORS, ETC.) AND IF THERE IS AN EXPOSED HOLE IN EXISTING CONCRETE BASE, FILL/PATCH/FABRICATE MATERIAL TO COVER HOLE. FOUNTAIN SHALL BE TURNED OVER TO CITY.
	EXISTING STORM DRAIN LINE TO BE DEMOLISHED AND REMOVED
	EXISTING BOLLARD TO BE DEMOLISHED AND REMOVED.
ITEMS TO BE PROTECTED OR RELOCATED	
	EXISTING STORM DRAIN LINE TO REMAIN AND BE PROTECTED. CONTRACTOR SHALL CAMERA EXISTING STORM DRAIN LINES TO REMAIN TO ENSURE THAT ALL LINES ARE CLEAN AND STRUCTURALLY SOUND
	EXISTING PERFORATED SUBDRAIN LINE TO REMAIN AND BE PROTECTED.
	EXISTING CLEANOUT BOX TO REMAIN AND BE PROTECTED.
	EXISTING CONCRETE EDGE, AND HEADER BOARD, TO REMAIN AND BE PROTECTED.
	EXISTING CHAIN LINK FENCING TO REMAIN AND BE PROTECTED. FENCE ADJACENT TO PROPOSED PERIMETER PATH IMPROVEMENTS MAY BE REMOVED AND REPLACED AS DEEMED NECESSARY BY THE CONTRACTOR.
	EXISTING CONCRETE WALL AND FENCING TO REMAIN AND BE PROTECTED
	EXISTING ASPHALT DRIVEWAY TO REMAIN AND BE PROTECTED. CONTRACTOR SHALL REMOVE ASPHALT AT DRIVEWAY AS NEEDED TO INSTALL NEW CONCRETE AND PROVIDE SMOOTH TRANSITION BETWEEN BOTH MATERIALS (12" MAX.)
	EXISTING CONCRETE STAIRS TO REMAIN AND BE PROTECTED.
	POST TO REMAIN IN PLACE, SIGN TO BE REMOVED AND REPLACED WITH ADA SIGN
	WOODEN CURB TO REMAIN AND BE PROTECTED
	EXISTING DRAIN LINE ALONG BOTTOM OF SLOPE SHALL REMAIN AND BE PROTECTED. IF EXISTING DRAIN LINE AT DRINKING FOUNTAIN LOCATION IS IN CONFLICT WITH PROPOSED WORK, DRAIN SHALL BE CAPPED AT BOTH ENDS OF NEW FOUNTAIN PAD AND REMAIN IN PLACE.
	EXISTING WOOD BENCH, ALONG WITH ASSOCIATED FOOTING, TO REMAIN AND BE PROTECTED. CONTRACTOR CAN REMOVE BENCH FOR CONCRETE IMPROVEMENTS BUT SHALL REPLACE AS IS OR BETTER.

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CONSULTANT

SHEET TITLE

**DEMOLITION PLAN**

PROJECT NAME

**LUCCHESI PARK  
TURF REPLACEMENT  
PROJECT**

PROJECT ADDRESS

**320 N McDOWELL BLVD  
PETALUMA, CA 94954**

SUBMITTAL	DATE
DESIGN DEVELOPMENT SUBMITTAL	01/06/23
90% SUBMITTAL	02/03/23
BID SUBMITTAL	05/02/25
RE-BID SUBMITTAL	06/13/25

NO.	REVISIONS	DATE
	ADDENDUM 2	07/09/25

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SHEET NO.	
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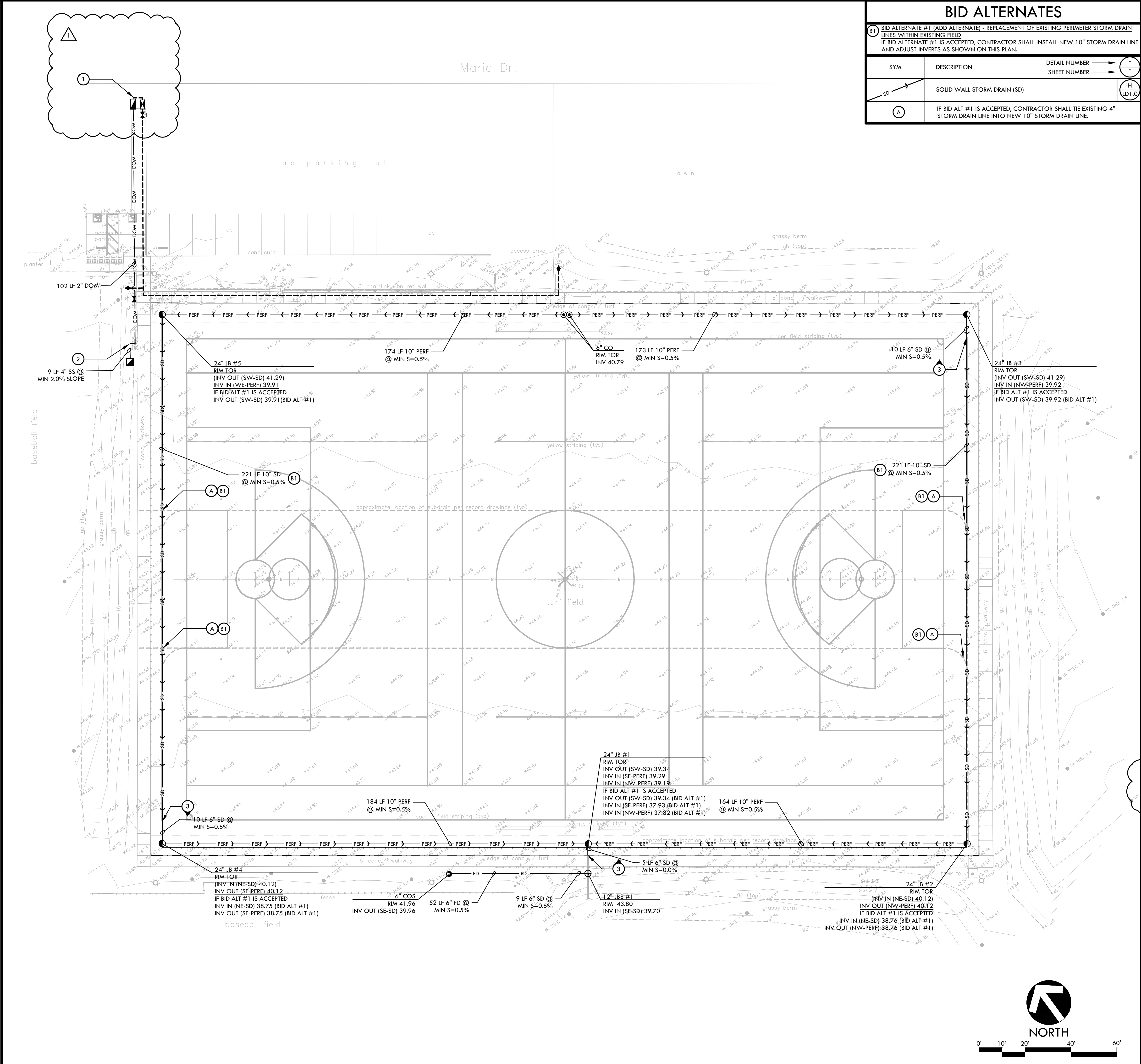
DEMOLITION PLAN







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BID ALTERNATES			
B1) BID ALTERNATE #1 (ADD ALTERNATE) - REPLACEMENT OF EXISTING PERIMETER STORM DRAIN LINES WITHIN EXISTING FIELD			
IF BID ALTERNATE #1 IS ACCEPTED, CONTRACTOR SHALL INSTALL NEW 10" STORM DRAIN LINE AND ADJUST INVERTS AS SHOWN ON THIS PLAN.			
SYM	DESCRIPTION	DETAIL NUMBER	SHEET NUMBER
	SOLID WALL STORM DRAIN (SD)		
	IF BID ALT #1 IS ACCEPTED, CONTRACTOR SHALL TIE EXISTING 4" STORM DRAIN LINE INTO NEW 10" STORM DRAIN LINE.		

- DRAINAGE NOTES
1.

THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES, AND SERVICES SHOWN IN THE CONTRACT DOCUMENTS SHALL BE DEEMED TO BE APPROXIMATIONS ONLY. ALL DISCREPANCIES BETWEEN WHAT IS SHOWN AND THE ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT UNDER GROUND SERVICE ALERT (USA) AT (800) 227-2600 PRIOR TO ANY DEMOLITION OR EXCAVATION. UPON COMPLETION OF USA MARKING OPERATIONS, CONTRACTOR SHALL RECORD ALL UTILITY MARKINGS ON A SEPARATE SET OF DRAWINGS. THIS SET SHALL BE KEPT ON-SITE FOR REFERENCE FOR DURATION OF CONTRACT.
2.

ALL EXISTING DRAINAGE STRUCTURES, BOXES, UTILITY VAULTS ETC. TO REMAIN, SHALL BE BROUGHT TO FINAL FINISH GRADE PRIOR TO FINAL SURFACE TREATMENT.
3.

THE CONTRACTOR IS TO PROTECT DRAINAGE SYSTEM FROM DEBRIS, INCLUDING SOIL, ROCK MATERIAL, AND TRASH FROM ENTERING THE PIPE DURING CONSTRUCTION. CONTRACTOR SHALL AVOID PLACING CONSTRUCTION VEHICLES OVER INSTALLED DRAINAGE TRENCHES TO PREVENT CRUSHING OF PIPE.
4.

COORDINATE ALL SLEEVING AND UTILITY LOCATIONS AS SHOWN ON THE PLANS AND DETAILS CONTAINED WITHIN THESE CONTRACT DOCUMENTS.
5.

THE CONTRACTOR IS TO ENSURE THAT ALL REMAINING ACTIVE AND NEW DRAINAGE AND UTILITY LINES ARE PROTECTED AND UNDAMAGED FROM TRENCHING AND FOOTING EXCAVATIONS FOR NEW FOOTINGS, PARTICULARLY FOR NEW FENCING AND WALLS.
6.

ALL ABANDONED STORM LINES SHALL REMAIN IN PLACE UNLESS IN CONFLICT WITH PROPOSED DRAINAGE, UTILITY, OR SUBGRADING OPERATIONS, IN WHICH CASE ABANDONED PIPE IN CONFLICT SHALL BE REMOVED. REMAINING ABANDONED STORM PIPE SHALL BE SEALED WITH APPROPRIATELY SIZED CONCRETE CAP (3 SACK MIX) 6" ENVELOPE OUTSIDE AND INSIDE DIAMETER OF PIPE.
7.

PRIOR TO ALL DRAINAGE AND UTILITY WORK, CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL POTENTIAL DRAINAGE CONNECTIONS AND EXISTING UTILITY BY POT-HOLING. IN ADDITION, ALL DOWNSTREAM CONNECTIONS TO EXISTING STRUCTURES SHALL BE THE START OF THESE OPERATIONS, AND GRADES SHALL BE VERIFIED.

DRAINAGE LEGEND			
SYM	DESCRIPTION	DETAIL NUMBER	SHEET NUMBER
	JUNCTION BOX (JB), SIZE PER PLAN		
	CLEANOUT IN SYNTHETIC TURF (CO)		
	CLEANOUT IN SOFTSCAPE (COS)		
	JUNCTION BOX IN SOFTSCAPE (JBS), SIZE PER PLAN		
	PERFORATED CHDPE SUBDRAIN LINE (PERF)		
	PERFORATED DRAINAGE TRENCH		
	SOLID WALL STORM DRAIN (SD)		
	FRENCH DRAIN (FD)		
	DRY WELL		
	BALL VALVE		
	SANITARY SEWER LINE (SS)		
	DOMESTIC WATER LINE (DOM)		
	BACKFLOW PREVENTER, BACKFLOW SHALL BE 2" WILKINS 975XL BACKFLOW WITH STRONG BOX S8BC-45CR ENCLOSURE AND PIPE INSULATION COVER.		
	ROOT BARRIER (360 LF)		
	MAIN LINE - 1.5" SCHEDULE 40 PVC WITH SOLVENT-WELD FITTINGS		
	RAINBIRD 33-DLRC QUICK COUPLER VALVE IN LANDSCAPE		
	BACKFLOW PREVENTER, BACKFLOW SHALL BE 1.5" WILKINS 975XL BACKFLOW WITH STRONG BOX S8BC-45CR ENCLOSURE AND PIPE INSULATION COVER.		
	GATE VALVES 2" AND SMALLER SHALL BE NIBCO T-113. FOR VALVES ABOVE 2" IN SIZE UTILIZE NIBCO F-619 FLANGED VALVE WITH SQUARE OPERATING NUT.		

CONTRACTOR SHALL TIE NEW DOMESTIC WATER LINE AND IRRIGATION LINE, INCLUDING BACKFLOW PREVENTERS, TO EXISTING STUB OUT AT EXISTING METER. CONTRACTOR SHALL VERIFY LOCATION OF STUB-OUT ON SITE.		
CONTRACTOR SHALL TIE IN DOMESTIC WATER AND SANITARY SEWER LINE INTO DRINKING FOUNTAIN		
CONTRACTOR TO CONNECT NEW SD LINE TO EXISTING 6" SD LINE AT LOCATION SHOWN.		
INV (INV)	INVERT EXISTING INVERT	
RIM	RIM ELEVATION	
TOR	TOP OF ROCK ELEVATION	
LF	LINEAR FEET	
S=0.5%	SLOPE	
MIN.	MINIMUM	
N, S, W, EA,	NORTH, SOUTH, WEST, EAST	

VERDE DESIGN

LANDSCAPE ARCHITECTURE

CIVIL ENGINEERING

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CONSULTANT

SHEET TITLE

DRAINAGE AND UTILITIES PLAN

PROJECT NAME

LUCCHESI PARK TURF REPLACEMENT PROJECT

PROJECT ADDRESS

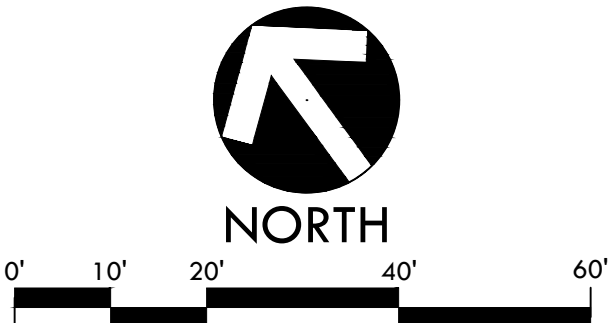
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SUBMITTAL	DATE
DESIGN DEVELOPMENT SUBMITTAL	01/06/23
30% SUBMITTAL	02/03/23
BID SUBMITTAL	05/02/25
RE-BID SUBMITTAL	06/13/25

NO.	REVISIONS	DATE
	ADDENDUM 2	07/09/25

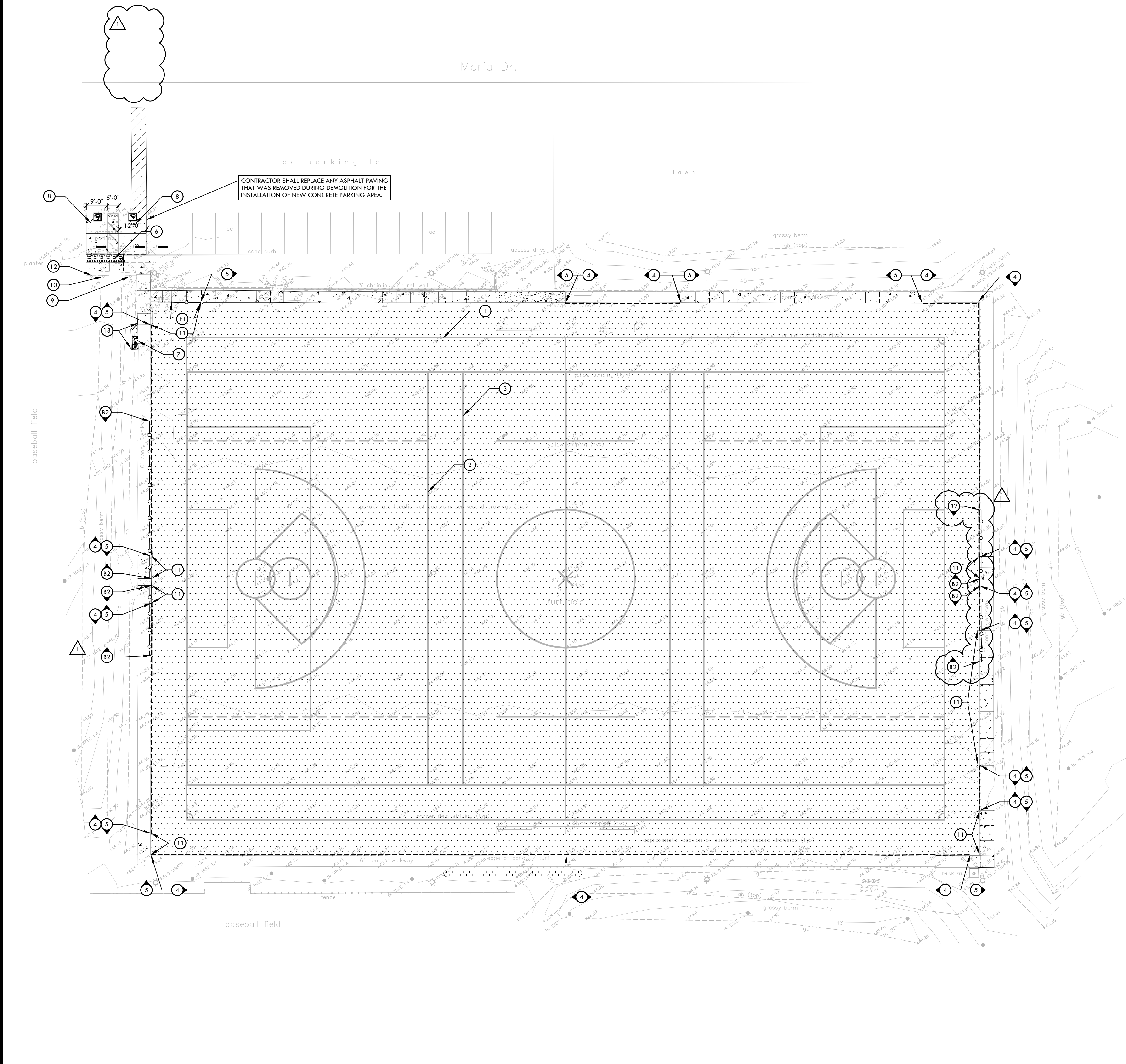
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DATE ISSUED	06/13/25	SCALE	1"=20'-0"
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SHEET NO.	L5.0		

DRAINAGE AND UTILITIES PLAN





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## MATERIAL NOTES

1. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ELEMENTS INCLUDING UTILITY LOCATIONS AND REQUIRED SLEEVING PRIOR TO INSTALLATION. VERIFY CRITICAL DIMENSIONS, REFERENCE POINT LOCATIONS AND CONSTRUCTION CONDITIONS PRIOR TO INITIATING CONSTRUCTION. TEMPORARY BENCHMARKS OR REFERENCE POINTS SHALL BE SET BY THE CONTRACTOR AS NECESSARY. NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY SHOULD DISCREPANCY ARISE AND REDIRECT WORK TO AVOID DELAYS.
2. THE INTERFACE OF ALL PROPOSED IMPROVEMENTS TO EXISTING SITE SHALL CONFORM AND BE SMOOTH AND UNIFORM.
3. ALL REINFORCING AND FORMS SHALL BE SECURED IN PLACE AND ACCEPTED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING ANY CONCRETE.
4. CONCRETE FINISHES SHALL BE AS NOTED. CONTRACTOR SHALL PROVIDE 4"x4" SAMPLES OF ALL SPECIFIED FINISHES OF CONCRETE USING THE SAME MATERIALS THAT WILL BE USED IN THE ACTUAL CONSTRUCTION FOR EACH TYPE SPECIFIED. SAMPLES SHALL BE PREPARED WELL ENOUGH IN ADVANCE OF SCHEDULED CONCRETE POUR TO ALLOW FOR REVIEW AND POSSIBLE RE-POURING OF UNACCEPTABLE SAMPLES. UNACCEPTABLE SAMPLES SHALL BE RE-PREPARED UNTIL ACCEPTED BY THE OWNER'S REPRESENTATIVE. ACCEPTED SAMPLES SHALL BE PROTECTED AND REMAIN ON SITE FOR REFERENCE UNTIL FINAL ACCEPTANCE.
5. CONTRACTOR SHALL PROVIDE AN ALLOWANCE FOR CONCRETE MOCKUPS PER SPECIFICATIONS SECTION 32 32 13.

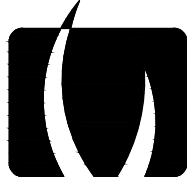
## MATERIAL LEGEND

SYM	DESCRIPTION	DTL
(E)	SYNTHETIC TURF (OWNER FURNISHED, CONTRACTOR INSTALLED)	(E) UD1.0
(A)	CONCRETE PAVING, CONTRACTOR SHALL DOWEL ALL NEW CONCRETE INTO EXISTING CONCRETE AT 24" O.C. DOWELING INTO ADJACENT WALL SHALL BE 48" O.C.	(A) UD2.0
(A)	CONCRETE PAVING - VEHICULAR	(A) UD2.0
(H)	ASPHALT PAVING - VEHICULAR	(H) UD2.0
(B)	EXPANSION JOINT SCORE JOINT	(B) UD2.0
(F)	NATURAL GRASS SEED. SEED SHALL BE "SPORTSCLUB 60/40 TOURNAMENT BLUE/RYE MIX" FROM PACIFIC COAST SEED. SEED SHALL WATERED THROUGHOUT PROJECT AND UNTIL ROOTS ARE 4" IN DEPTH.	(F) UD2.1
(G)	3' TALL CHAIN LINK FENCE	(G) UD2.1
(1)	70 X 110 YD SOCCER FIELD STRIPING (WHITE)	(1) UD2.1
(2)	BOYS LACROSSE FIELD STRIPING (YELLOW)	(2) UD2.1
(3)	GIRLS LACROSSE FIELD STRIPING (BLUE)	(3) UD2.1
(4)	SYNTHETIC TURF CONNECTION AT EXISTING EDGE/PAVING/CURB	(4) UD1.0
(5)	SYNTHETIC TURF CONNECTION AT NEW CONCRETE. NEW HEADER BOARD TO ALIGN AND BE FLUSH WITH EXISTING HEADER BOARD ON EACH SIDE.	(5) UD1.0
(6)	TRUNCATED DOMES	(6) UD2.0
(7)	DRINKING FOUNTAIN	(7) UD2.1
(8)	ACCESSIBLE PARKING STALLS	(8) UD2.0
(9)	ACCESSIBLE PARKING SIGN - VAN	(9) UD2.0
(10)	ACCESSIBLE PARKING SIGN ON EXISTING POST	(10) UD2.0
(11)	CONCRETE THICKENED EDGE	(11) UD2.0
(12)	PARKING TOW AWAY SIGN	(12) UD2.0
(13)	6" CURB	(13) UD2.0

## BID ALTERNATES

- (B2) BID ALTERNATE #2 (ADD ALTERNATE) - REPLACEMENT OF EXISTING PERIMETER FENCING FABRIC  
IF BID ALTERNATE #2 IS ACCEPTED, CONTRACTOR SHALL INSTALL NEW BLACK FENCE FABRIC. REFER TO SPECIFICATION SECTION 32 31 13 FOR ADDITIONAL INFORMATION.

SYM	DESCRIPTION
(B2)	NEW BLACK FENCE FABRIC

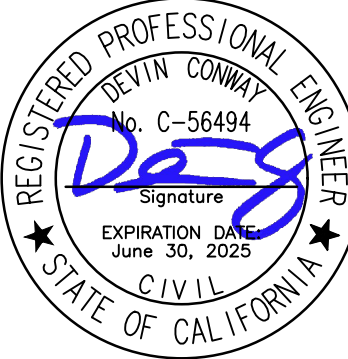


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Santa Rosa, CA 95403  
tel: 707.800.4204  
fax: 408.985.7260  
www.VerdeDesigninc.com

STAMP



CONSULTANT

SHEET TITLE

MATERIAL AND  
DETAIL REFERENCE  
PLAN

PROJECT NAME

LUCCHESI PARK  
TURF REPLACEMENT  
PROJECT

PROJECT ADDRESS

320 N McDOWELL BLVD  
PETALUMA, CA 94954

SUBMITTAL	DATE
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DESIGN DEVELOPMENT SUBMITTAL	01/06/23
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90% SUBMITTAL	02/03/23
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BID SUBMITTAL	05/02/25
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RE-BID SUBMITTAL	06/13/25
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NO.	REVISIONS	DATE
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1	ADDENDUM 2	07/09/25
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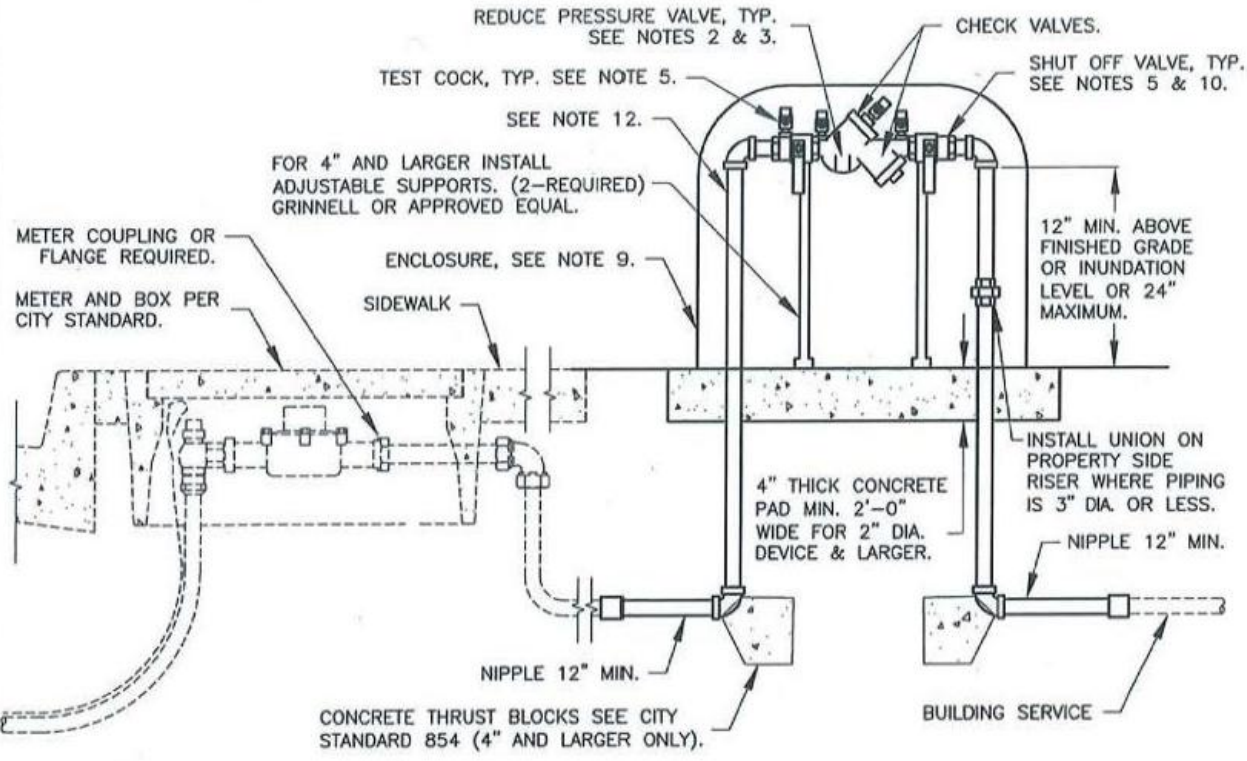
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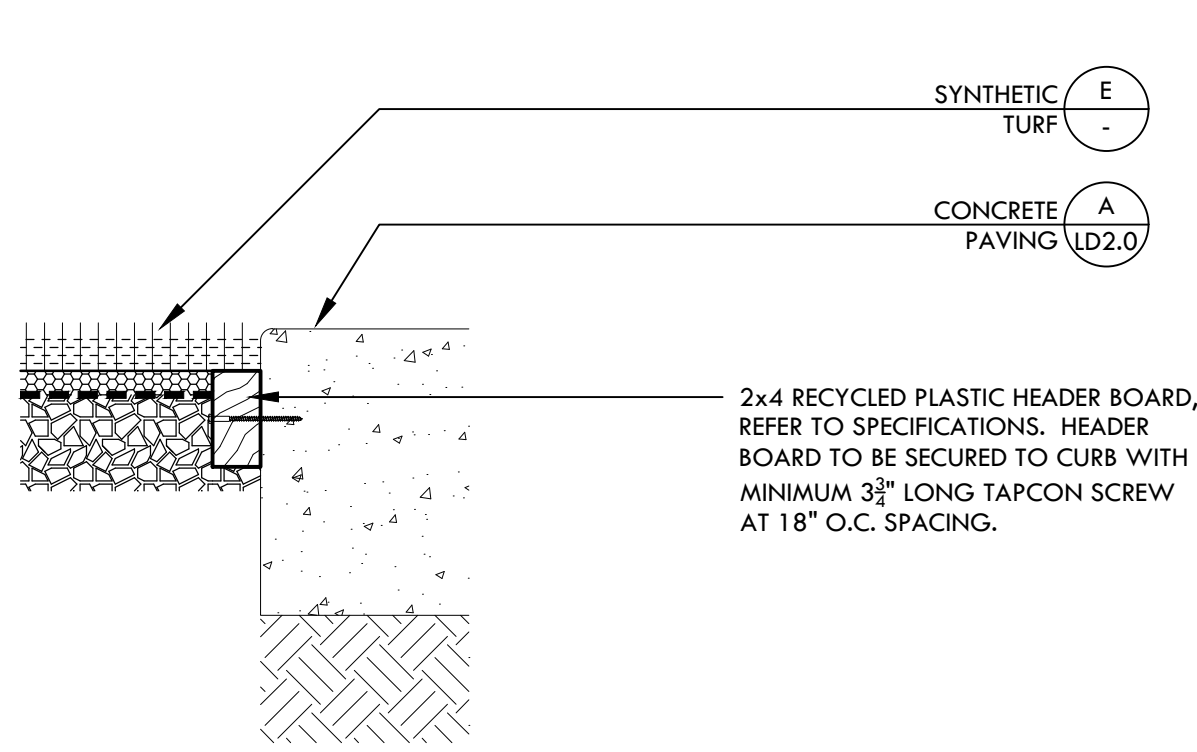
ALL IDEAS, DESIGNS, ARRANGEMENTS, AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY AND THE PROPERTY OF VERDE DESIGN, INC. AND WERE CREATED, EVOLVED, AND DEVELOPED FOR USE ON AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF SUCH IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED, REPRODUCED, OR PUBLISHED BY ANY METHOD, IN WHOLE OR IN PART, OR DISCLOSED TO ANY PERSON, FIRM, OR CORPORATION FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN PERMISSION OF VERDE DESIGN, INC.



- NOTES:**
- SEE WATER SYSTEM DESIGN GUIDELINES.
  - REDUCED PRESSURE BACKFLOW ASSEMBLIES SHALL BE REQUIRED FOR ANY USE WHERE TOXIC MATERIALS ARE USED OR WHERE POSITIVE PROTECTION OF THE PUBLIC WATER SUPPLY IS REQUIRED. TYPICAL APPLICATIONS INCLUDE: ALL INDUSTRIAL AND IRRIGATION SERVICES, PARKS, HOSPITALS, MEDICAL AND DENTAL LABORATORIES, MORTUARIES, INDUSTRIAL PLANTS AND DRY CLEANERS OR AS DETERMINED BY PUBLIC WORKS & UTILITIES.
  - REDUCED PRESSURE BACKFLOW ASSEMBLIES SHALL BE INSTALLED ADJACENT TO AND ON THE PROPERTY SIDE OF SIDEWALK WHERE APPLICABLE. WHERE NO SIDEWALK EXISTS, THE REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE WATER METER LOCATION. THERE SHALL BE NO TEE OR BRANCH LINES BETWEEN THE WATER METER AND ASSEMBLY LOCATION. ANY CONFLICTS SHALL BE RESOLVED BY PUBLIC WORKS & UTILITIES.
  - APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLIES SHALL BE AS SHOWN ON "LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES" (LATEST REVISION) BY THE STATE OF CALIFORNIA WATER RESOURCE CONTROL BOARD, DIVISION OF DRINKING WATER, INFORMATION FOR PUBLIC DRINKING WATER SYSTEMS.
  - ALL REDUCED PRESSURE BACKFLOW ASSEMBLIES SHALL BE PROVIDED WITH A MINIMUM OF FOUR (4) TEST COCKS, AND TWO (2) SHUT OFF VALVES.
  - THE PIPING FROM THE METER TO THE REDUCED PRESSURE BACKFLOW ASSEMBLY AND THE REDUCED PRESSURE BACKFLOW ASSEMBLY ITSELF, MUST BE THE SAME SIZE AS THE METER UNLESS OTHERWISE APPROVED BY PUBLIC WORKS & UTILITIES.
  - FOR 2" PIPE DIAMETER OR LESS, A 12" LONG MINIMUM BRASS NIPPLE OR TYPE "L" HARD TEMPER COPPER PIPE IS REQUIRED AT BOTH UNDERGROUND ELBOWS.
  - A THERMAL EXPANSION TANK WHEN USED ON A DOMESTIC SERVICE SHALL BE SIZED AND INSTALLED PER MANUFACTURER'S RECOMMENDATION ON THE COLD WATER SUPPLY LINE TO THE WATER HEATER.
  - AN ENCLOSURE IS RECOMMENDED FOR PROTECTION FROM FREEZING AND VANDALISM.
  - SHUT OFF VALVES:
    - 2" AND LESS SHALL BE BALL VALVE
    - 2 1/2" AND GREATER SHALL BE RESILIENT SEAT GATE VALVE
  - ALL PIPING, VALVES, NIPPLES, ETC. SHALL BE THREADED BRASS.
    - 2" AND LESS SHALL BE TYPE "L" HARD-TEMPER COPPER
    - 4" AND GREATER SHALL BE FLANGED DUCTILE IRON.
  - PVC PIPE OR FITTINGS SHALL NOT BE USED.
  - IF PROPOSING TO INSTALL THIS DEVICE IN A FLOOD "ZONE", CONTACT PUBLIC WORKS & UTILITIES FOR APPROVAL.
  - PVC PIPE OR FITTINGS SHALL NOT BE USED.

### ABOVE GROUND REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY

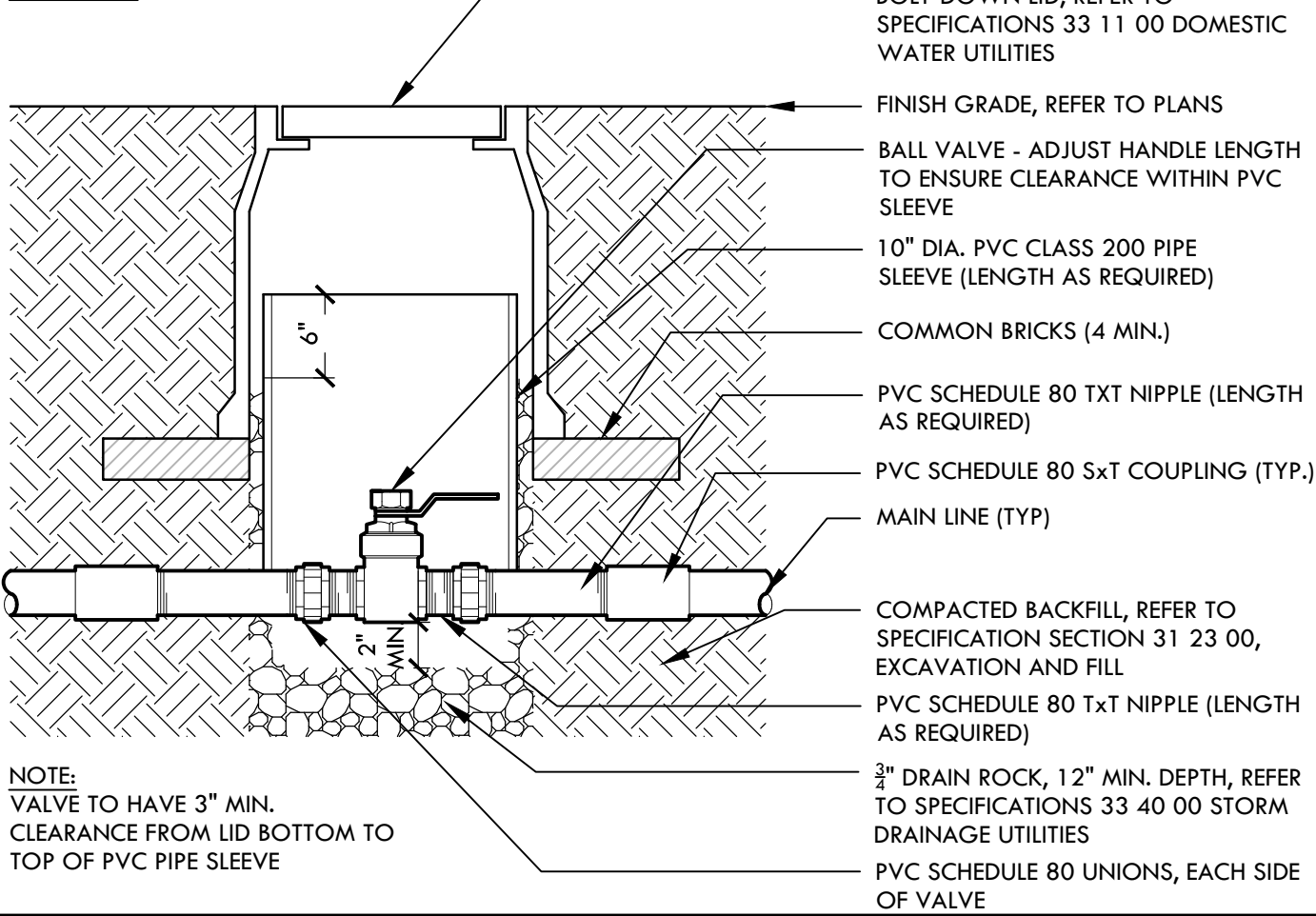
### SECTION



### K SYNTHETIC TURF CONNECTION AT NEW CONCRETE

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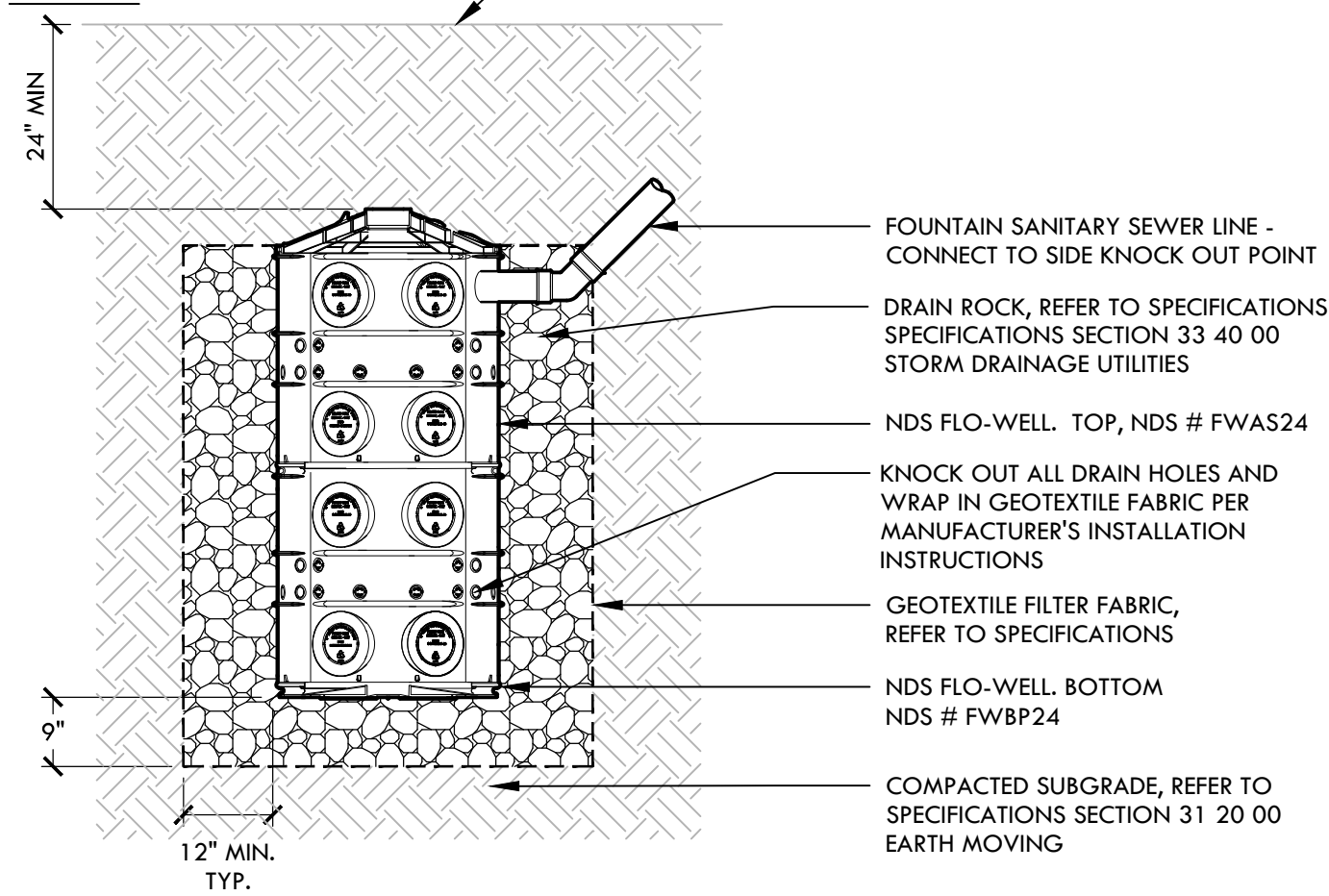
### SECTION



### J BALL VALVE

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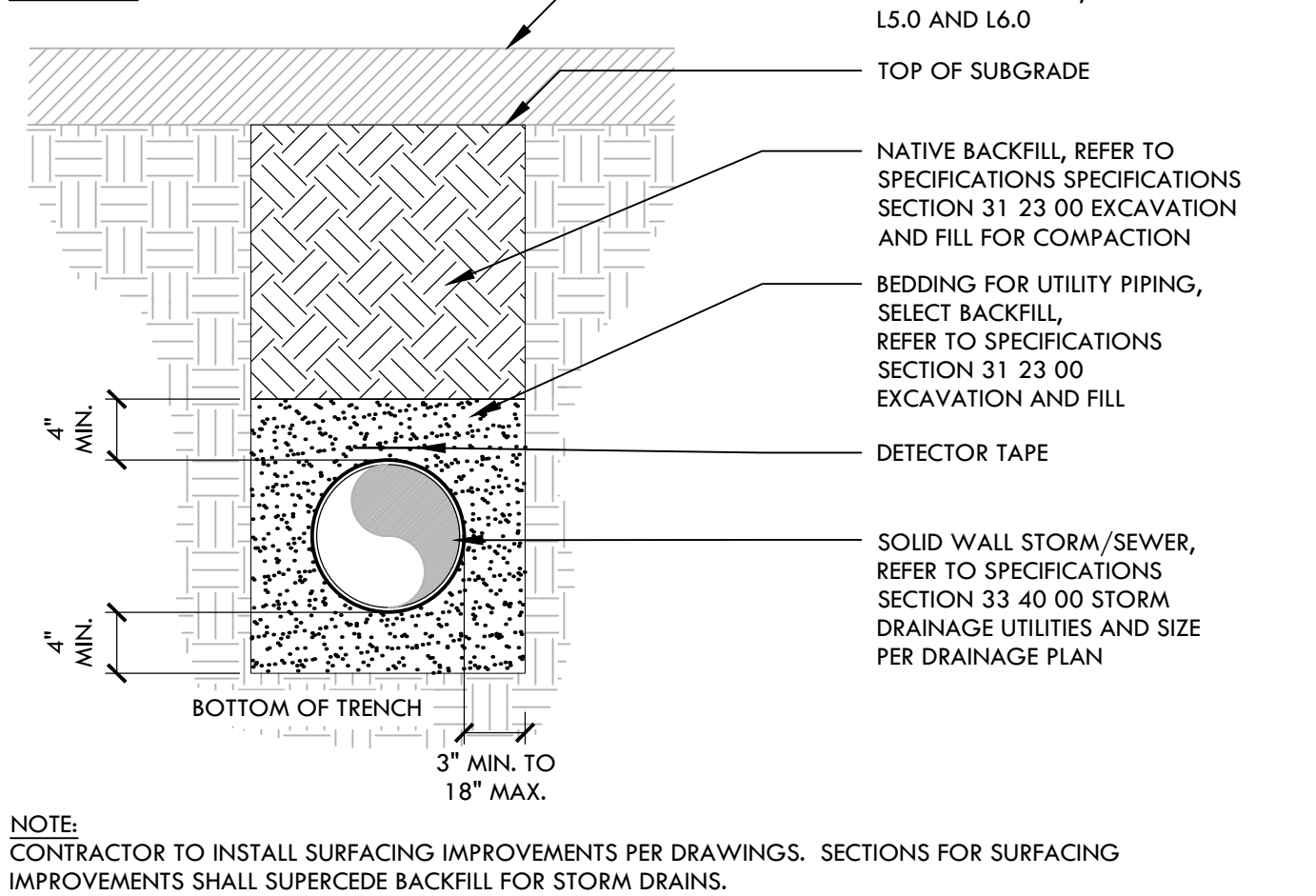
### SECTION



### K DRYWELL

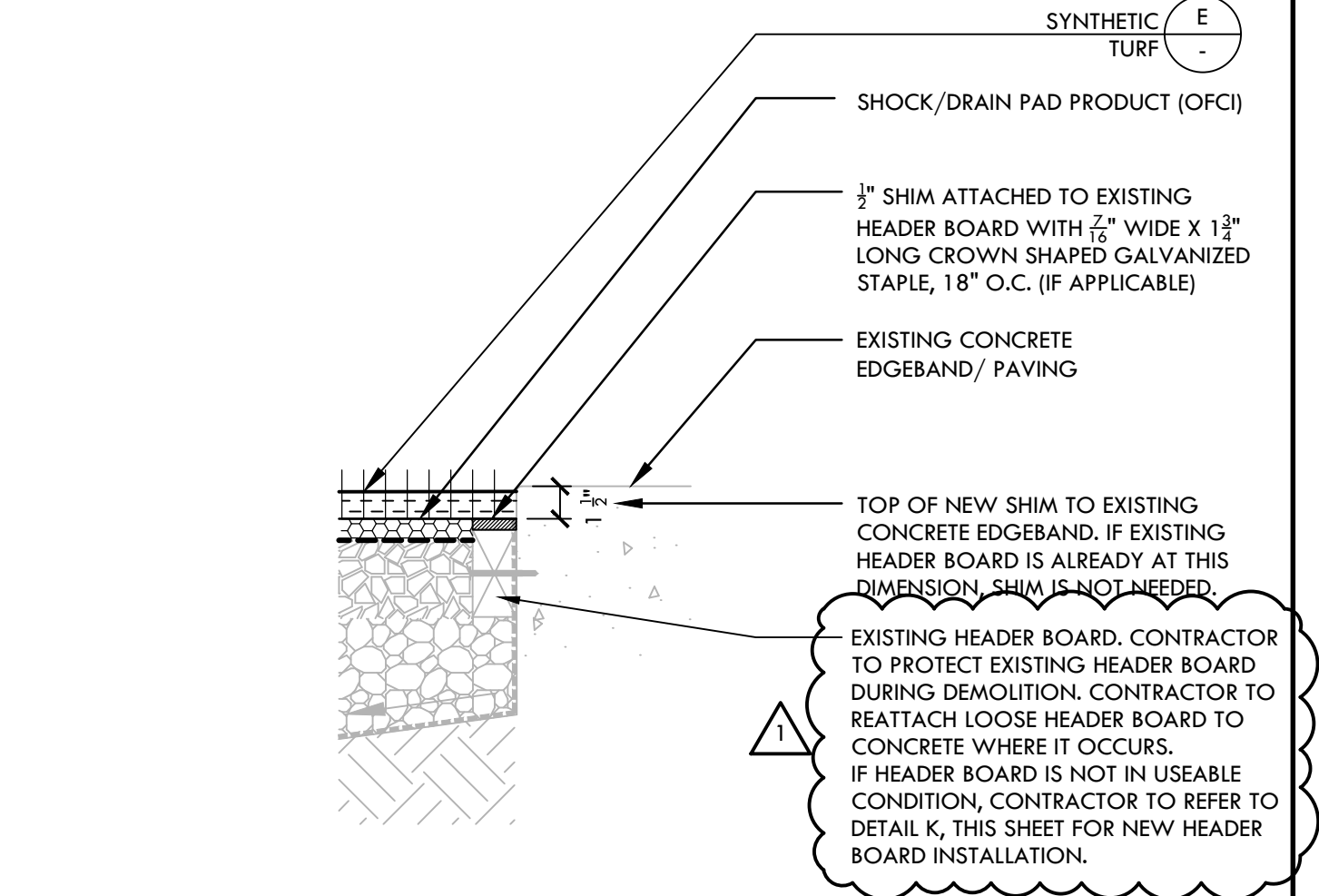
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### H TRENCH BACKFILL - SOLID WALL STORM/ SEWER

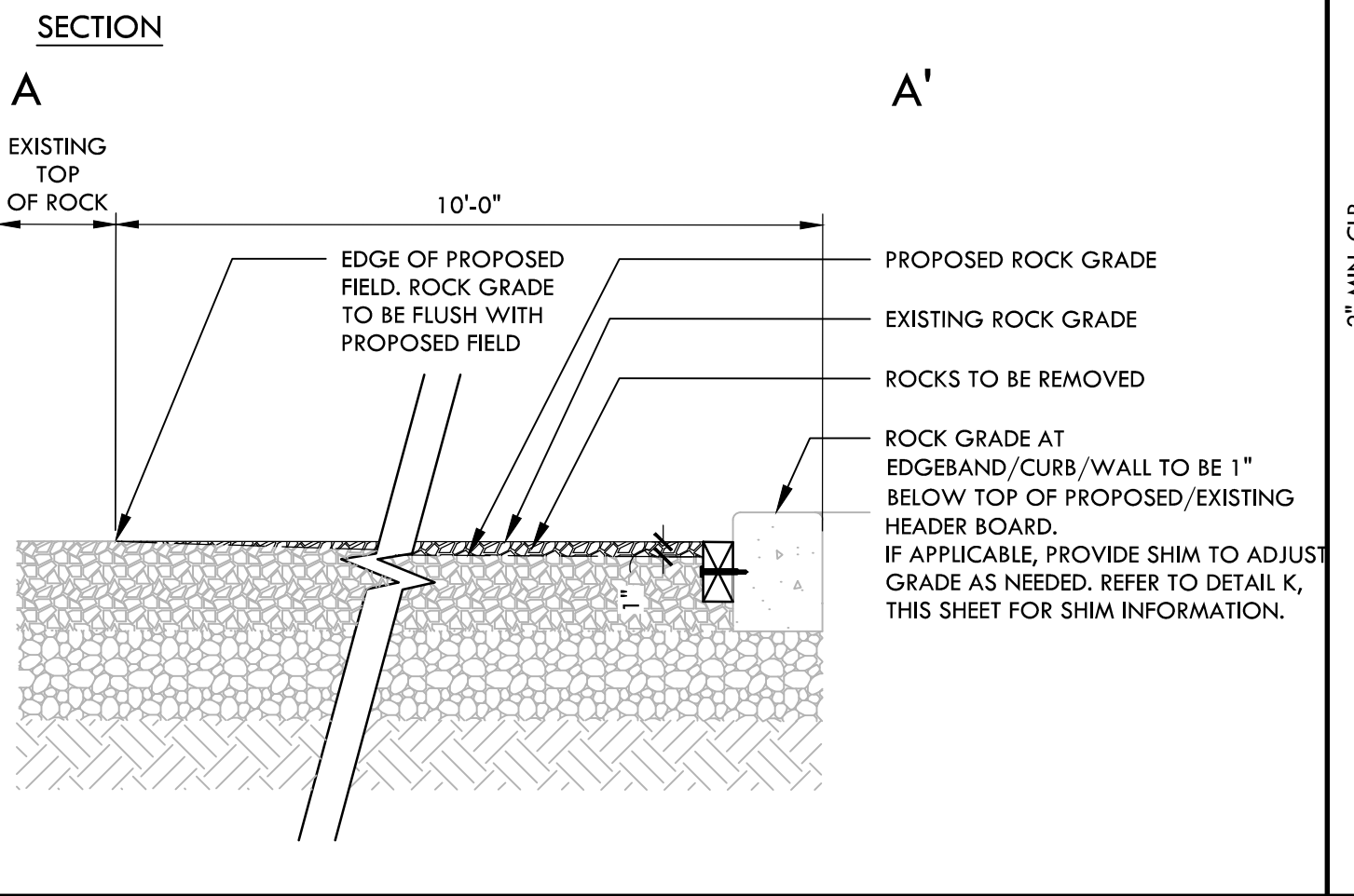
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### G SYNTHETIC TURF EDGE AT EXISTING EDGEBAND/PAVING

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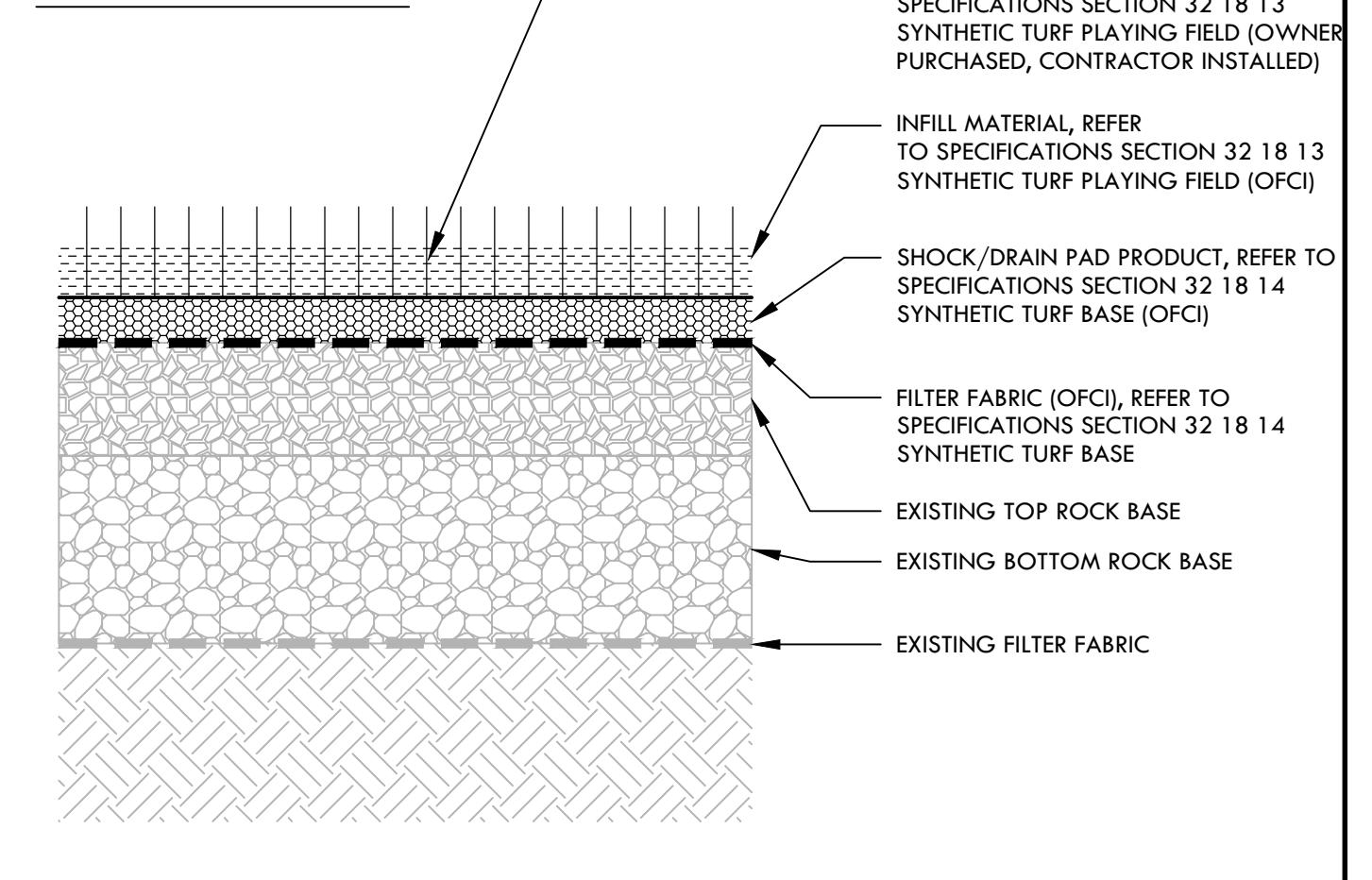
### SECTION



### F ROCK LAYER DEMOLITION - SECTION A-A'

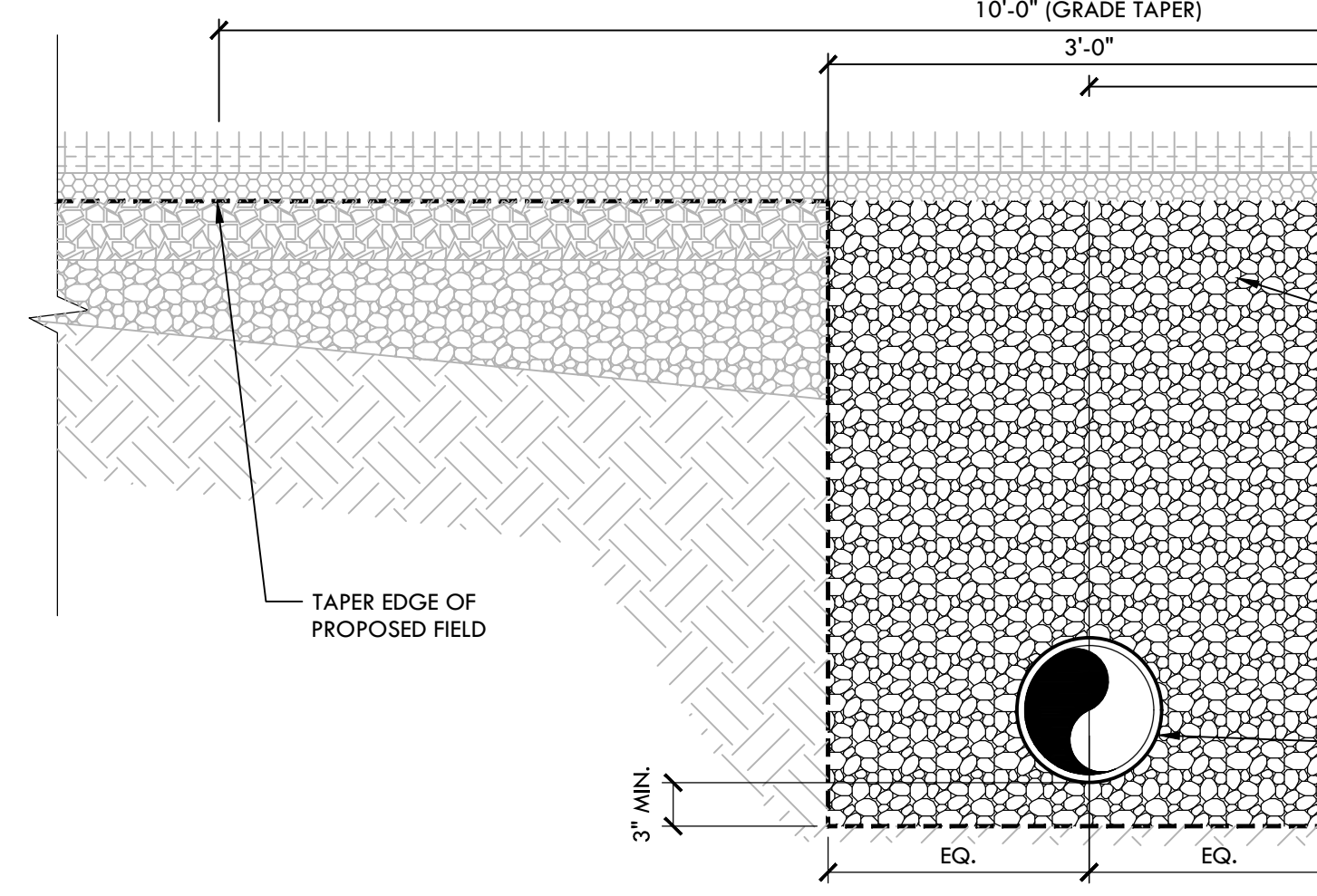
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### SYNTHETIC TURF SECTION

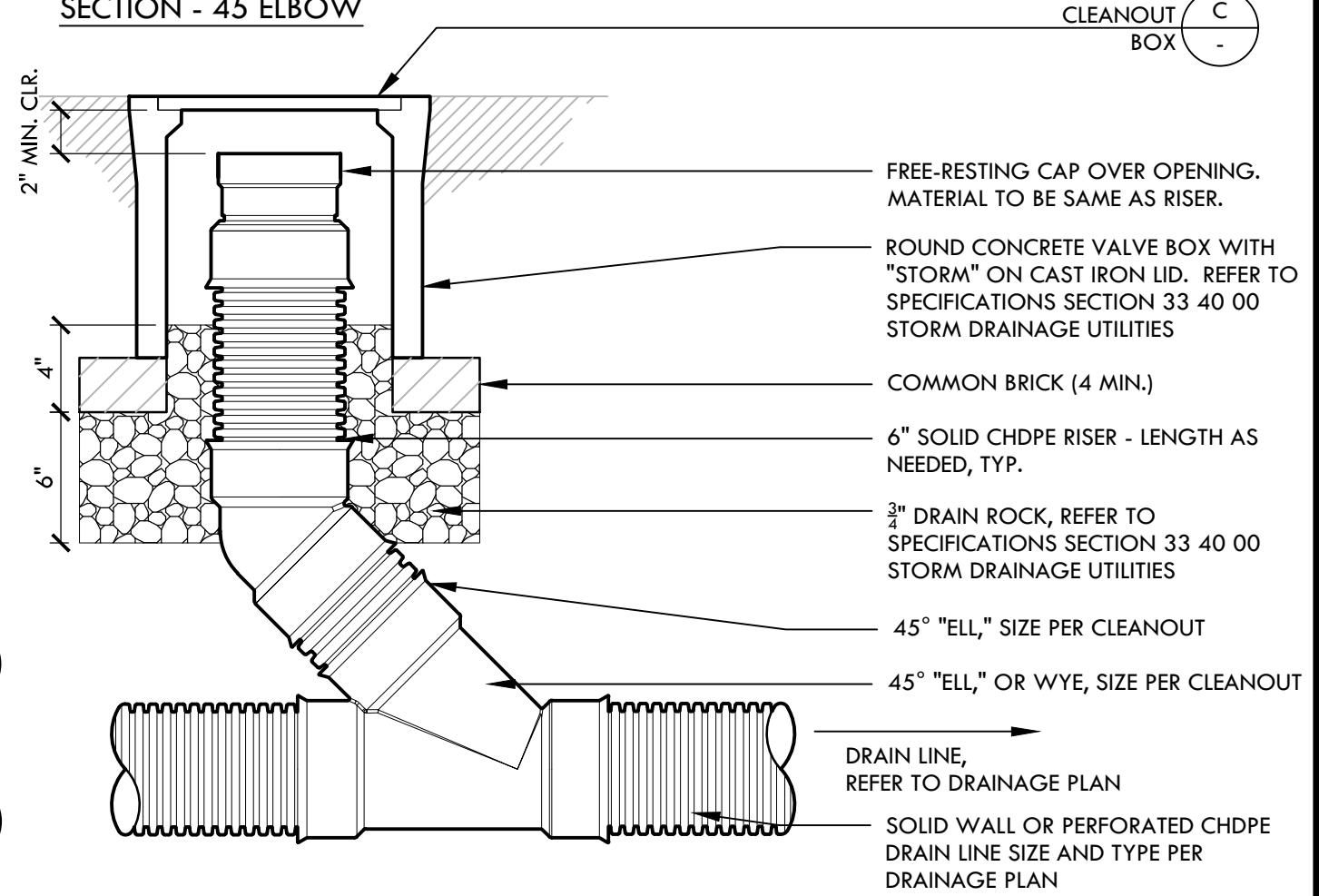


### E SYNTHETIC TURF WITH SHOCK/RAIN PAD

NTS



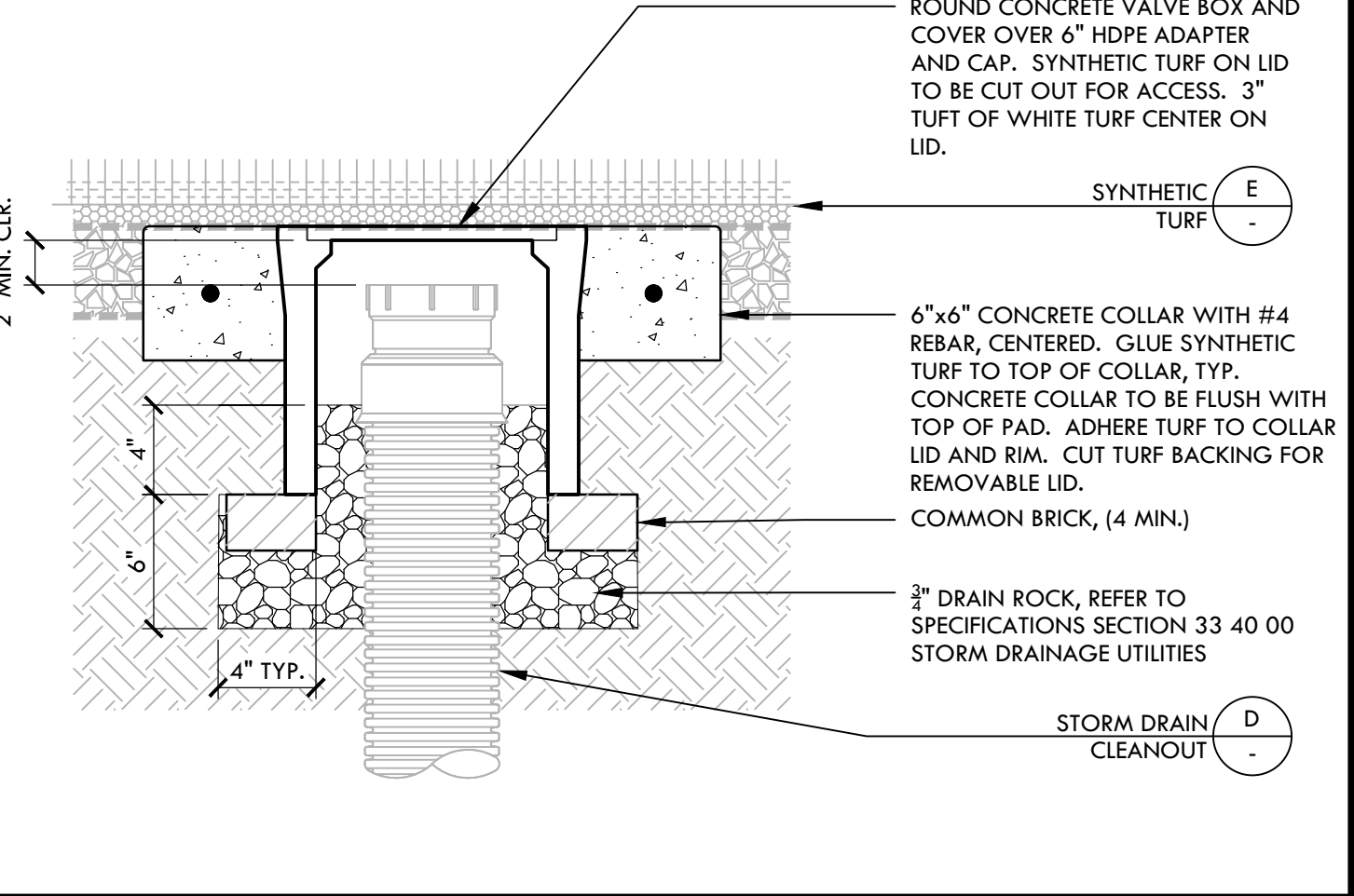
### A SUBDRAIN TRENCH AT FIELD EDGE



### D STORM DRAIN CLEANOUT

NTS

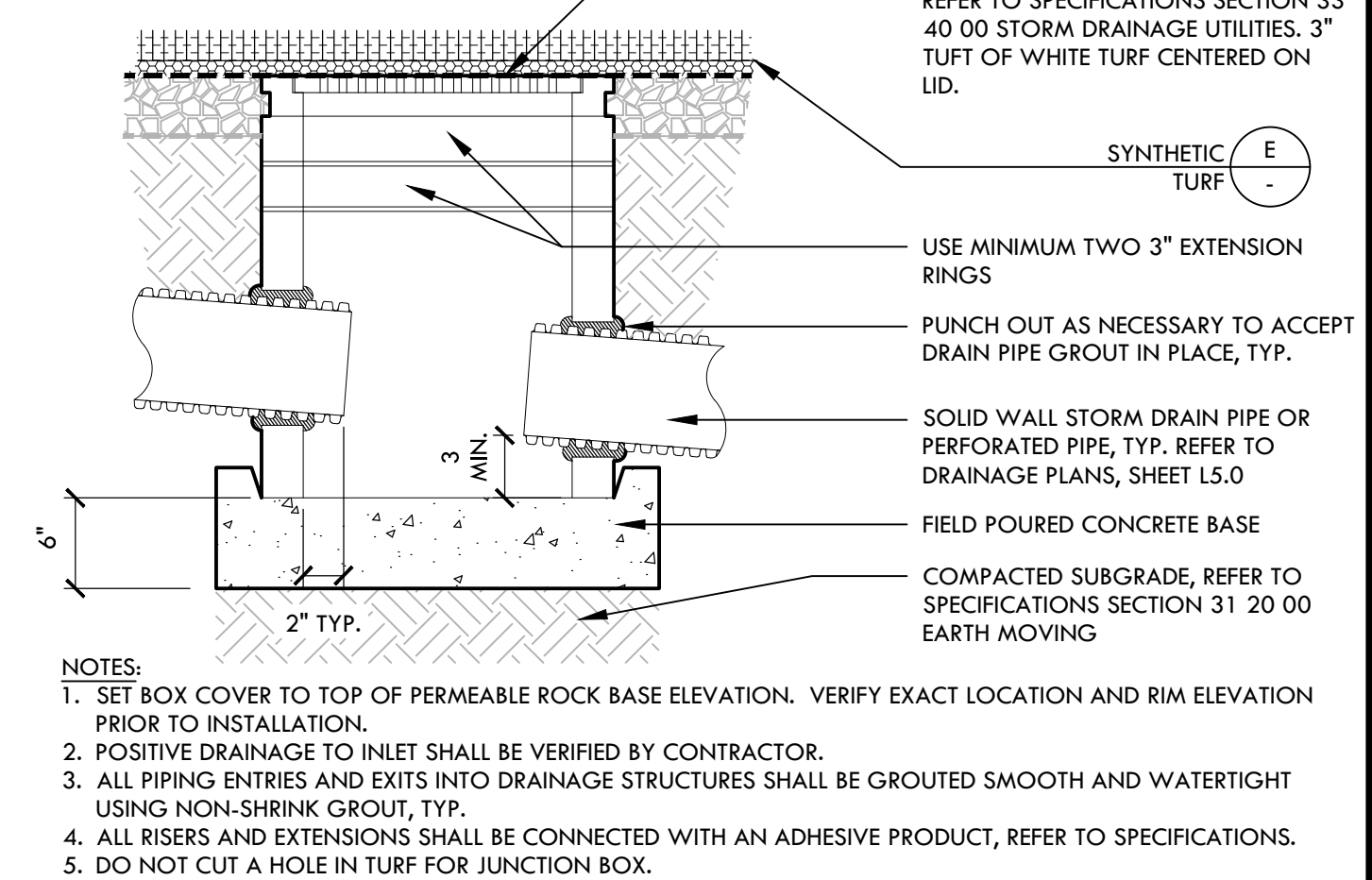
### SECTION



### C CLEANOUT IN SYNTHETIC TURF - COVERED

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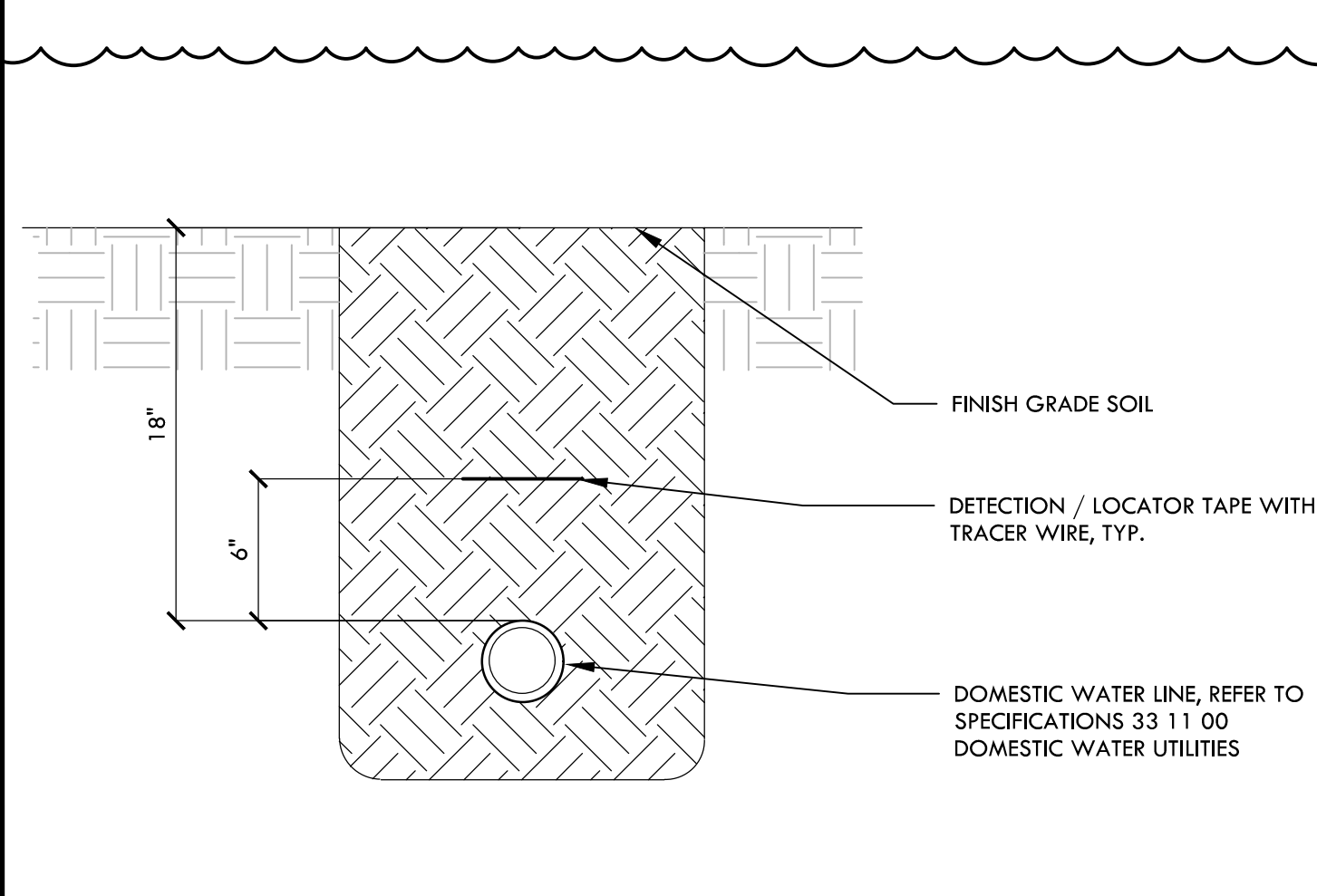
### SECTION



### B JUNCTION BOX - SYNTHETIC TURF

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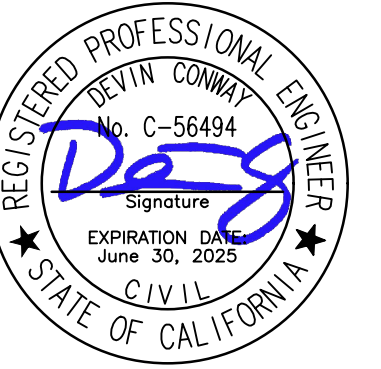
### L DOMESTIC WATER TRENCHING

NTS



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fax: 408.985.7260  
www.VerdeDesigninc.com

STAMP



CONSULTANT

SHEET TITLE

### CONSTRUCTION DETAILS

PROJECT NAME

**LUCCHESI PARK  
TURF REPLACEMENT  
PROJECT**

PROJECT ADDRESS

**320 N McDOWELL BLVD  
PETALUMA, CA 94954**

SUBMITTAL	DATE
DESIGN DEVELOPMENT SUBMITTAL	01/06/23
90% SUBMITTAL	02/03/23
BID SUBMITTAL	05/02/25
RE-BID SUBMITTAL	06/13/25

NO.	REVISIONS	DATE
1	ADDENDUM 2	07/09/25
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DRAWN BY <b>KL</b>	CHECKED BY <b>WD/DC</b>
DATE ISSUED <b>06/13/25</b>	SCALE <b>NTS</b>
PROJ. NO. <b>2108300</b>	

SHEET NO.

**LD1.0**

CONSTRUCTION DETAILS



**REVISED BID SCHEDULE**  
**07/17/2025**

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Price
1	Synthetic Turf Removal	86,660	SF		
2	Synthetic Turf & Infill Recycling	86,660	SF		
3	Clear and Grub	30	SF		
4	Rock/Pipe Removal at Ex Perimeter Drains	<del>80</del> 481	TONS		
5	Flush /Video Existing Drainage System	1	LS		
6	Hardscape Demolition	<del>3330</del> 3277	SF		
7	Saw Cut	<del>394</del> 321	LF		
8	Drinking Fountain Demolition	1	EA		
9	Miscellaneous Demolition	1	LS		
10	Tapering of Rock along edges to receive drainage / shock pad	11,621	SF		
11	Fine Grade / stringline field rock base	75,030	SF		
12	Video Existing Storm Line	1	LS		
13	Drain Rock	481	TONS		
14	10" Perforated Drain Line	698	LF		
15	6" Storm Drain Line	34	LF		
16	6" Cleanout	2	EA		
17	6" Soft Scape Cleanout	1	EA		
18	6" French Drain	52	LF		
19	Junction Box in Soft Scape	1	EA		
20	24" Junction Box	5	EA		
21	Miscellaneous Drainage Installation	1	LS		
22	2" Domestic Water Line	<del>140</del> 110	LF		
23	3" Sanitary Sewer Line	9	LF		
24	Dry Well	1	EA		
25	Ball Valve	1	EA		
26	10" Round Valve Box with Bolt Down Lid	1	EA		
27	<del>Water Meter</del>	<del>+</del>	<del>EA</del>	n/a	n/a
28	2" Backflow Preventer with Enclosure	1	EA		
29	1.5" Backflow Preventer with Enclosure	1	EA		
30	Miscellaneous Water line installation	1	EA		

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Price
31	Synthetic Turf Install, Shock Pad/Drain Tile, Fabric and infill Install	1	LS		
32	Concrete Paving and Rough Grading	2,917	SF		
33	Concrete thickened Edge	<del>157</del> 122	LF		
34	Synthetic Turf Connection, 2x4 Recycled Plastic Header Board at new concrete	<del>376</del> 421	LF		
35	ADA Parking Striping	1	LS		
36	Wheel Stop	3	EA		
37	ADA Parking Sign	2	EA		
38	Truncated Domes	1	EA		
39	3" Tall Chain Link Fencing	13	LF		
40	6" Concrete Curb	13	LF		
41	Drinking Fountian – Elkay	1	EA		
42	Root Barrier	360	LF		
43	Tow Away Sign	1	EA		
44	Asphalt Paving (including backfill at Parking)	<del>110</del> 275	SF		
45	Vegetation Swale	1	LS		
46	1.5" PVC Main Line	<del>273</del> 283	LF		
47	Gate Valve	1	EA		
48	Quick Coupler Valve	2	EA		
49	Valve Box with Bolt Down Lid (quick Coupler)	2	EA		
50	Traffic Control	1	LS		
51	Mobilization and Demobilization	1	LS		
<b>Total Base Bid</b>				<b>\$</b>	<b>\$</b>

**OPTIONAL BID ITEMS**

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Price
1	Replace Ex Storm Drain Line	460	LF		
2	Replace Ex Fencing Fabric	161	LF		

**\*Note:** In case of error in extension of price into the total price column, the unit price will govern.



Total Amount of Bid (written in words) is: _____
_____ Dollars and
_____ Cents.
In the event of discrepancy between words and figures, the words shall prevail.
\$ _____
Figures

**The award of the contract shall be awarded to the lowest price of the total of Base Bid items 1 through 51. Options Bid items should NOT be included in the Base Bid Price.**

\_\_\_\_\_  
Address of Bidder

\_\_\_\_\_  
Signature of Bidder

\_\_\_\_\_  
City

\_\_\_\_\_  
Name of Bidder (Print)

\_\_\_\_\_  
Telephone Number of Bidder

\_\_\_\_\_  
Fax Number of Bidder

\_\_\_\_\_  
Contractor's License Number

\_\_\_\_\_  
License's Expiration Date

**Addendum Acknowledgement**

Addendum No. 1    Signature Acknowledging Receipt: \_\_\_\_\_    Date: \_\_\_\_\_  
\_\_\_\_\_

Addendum No. 2    Signature Acknowledging Receipt: \_\_\_\_\_    Date: \_\_\_\_\_  
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Addendum No. 3    Signature Acknowledging Receipt: \_\_\_\_\_    Date: \_\_\_\_\_  
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Addendum No. 4    Signature Acknowledging Receipt: \_\_\_\_\_ Date: \_\_\_\_\_  
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Addendum No. 5    Signature Acknowledging Receipt: \_\_\_\_\_ Date: \_\_\_\_\_  
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Addendum No. 6    Signature Acknowledging Receipt: \_\_\_\_\_ Date: \_\_\_\_\_  
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Addendum No. 7    Signature Acknowledging Receipt: \_\_\_\_\_ Date: \_\_\_\_\_  
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Addendum No. 8    Signature Acknowledging Receipt: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_



## SECTION 33 40 00

## STORM DRAINAGE UTILITIES

## PART 1 - GENERAL

## 1.01 SUMMARY

- A. Section Includes: Storm drainage system improvements and related work as shown on the Drawings and specified including, but is necessarily limited to, the following:
  - 1. Pipe and fittings.
  - 2. Nonpressure transition couplings.
  - 3. Cleanouts.
  - 4. Drains.
  - 5. Catch basins.
  - 6. Dry wells.
- B. Related Requirements:
  - 1. Section 31 23 00 - Excavation and Fill
  - 2. Section 31 20 00 - Earth Moving
  - 3. Section 32 11 00 - Base Courses
  - 4. Section 32 33 00 - Site Furnishings
  - 5. Section 33 10 10 - Domestic Water Utilities

## 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. C478: Standard Specification for Circular Precast Reinforced Concrete Manhole Sections.
  - 2. C923: Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
  - 3. D2321: Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
  - 4. D2412: Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
  - 5. D2729: Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
  - 6. D3034: Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
  - 7. D3350: Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
  - 8. D4101: Standard Specification for Polypropylene Injection and Extrusion Materials.
- B. California Building Code, Current Edition.
- C. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

## 1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Coordinate work of this section with all other work contained in the Contract Documents.

## 1.04 ACTION SUBMITTALS

- A. Shop Drawings:

1. Junction boxes and dry wells. Include plans, elevations, sections, details, frames, covers, and grates.

B. Product Data: Manufacturer's cut-sheets of products to be used.

#### 1.05 INFORMATIONAL SUBMITTALS

A. Profile Drawings: Show system piping in elevation. Draw profiles at horizontal scale of not less than 1-inch equals 50 feet (1:500) and vertical scale of not less than 1-inch equals 5 feet (1:50). Indicate manholes and piping. Show types, sizes, materials, and elevations of other utilities crossing system piping.

B. Field Test Reports indicating and interpreting test results for compliance with performance.

#### 1.06 CLOSEOUT SUBMITTALS

A. Record Drawings:

1. Accurately record location of new piping, drain structures, and connections to existing systems using horizontal dimensions, elevations, inverts, and slope gradients as applicable.
2. Comply with the additional requirements of Section 01 78 39 – Project Record Documents.

#### 1.07 QUALITY ASSURANCE

A. Control of Work: Conform to Section 5 of the Standard Specifications.

B. Control of Materials: Conform to Section 6 of the Standard Specifications.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

A. Store pipe neatly and orderly, stacked and blocked to prevent damage. Cracked, checked, spalled, or otherwise damaged pipe and precast concrete units shall be removed from site.

B. Use of chain slings shall not be permitted.

C. Piping, fittings, and related materials shall be carefully handled. Comply with manufacturer's rigging instructions for precast items. Use of chain slings is not be permitted.

D. All pipelines, fittings and drainage structures shall be kept clean and closed during construction.

#### 1.09 FIELD CONDITIONS

A. Make provisions for, and take the necessary precautions to, protect existing and new work from damage during entire life of project.

B. Work of this Section shall not be executed when site conditions are detrimental to quality of work as determined by the Owner's Representative.

C. Do not interrupt service to facilities occupied or used by Owner without the Owner's written permission.

### PART 2 - PRODUCTS

#### 2.01 PIPE AND FITTINGS

A. General:



1. Pipe and fittings shall be clearly and permanently marked to identify manufacturer, type, class, or schedule and NSF approval as applicable.
  2. Unless otherwise noted, Contractor has option of using either CHDPE or PVC pipe as specified.
- B. Corrugated High Density Polyethylene (CHDPE) Pipe: Dual wall, perforated and solid with an integrally formed smooth waterway; "N-12 "drainage pipe by Advanced Drainage Systems, Inc., 510-913-2211, or equal.
1. Nominal sizes shall have a full circular cross-section, with an outer corrugated pipe wall and an essentially smooth inner wall (waterway).
  2. Corrugations may be either annular or spiral.
  3. Sizes shall conform to the AASHTO classification "Type S."
  4. Pipe manufacturer for this specification shall comply with the requirements for test methods, dimensions, and markings found in AASHTO Designations M252 and M294.
  5. The minimum parallel plate stiffness values when tested in accordance with ASTM D2412 shall be as follows:

Diameter	Pipe Stiffness
4 inch (100 mm)	50 psi (340 kPa)
6 inch (150 mm)	50 psi (340 kPa)
8 inch (200 mm)	50 psi (340 kPa)
10 inch (250 mm)	50 psi (340 kPa)
12 inch (300 mm)	50 psi (340 kPa)
15 inch (375 mm)	42 psi (290 kPa)

6. Fittings: Virgin PE compounds conforming with the requirements of ASTM D3350, cell class 324420C, and supplied or recommended by the pipe manufacturer.
  - a. The fittings shall not reduce or impair the overall integrity or function of the pipeline.
  - b. Common Corrugated Fittings:
    - 1) Couplers, reducers, and other in-line joint fittings.
    - 2) "Tees", "wyes", end caps, and other branch or complimentary assembly fittings.
  - c. Acceptable Installation Methods: Snap-on, screw-on, bell and spigot, and wrap around.
  - d. Couplings shall provide sufficient longitudinal strength to preserve pipe alignment and prevent separation at the joints.
  - e. Where designated on the Drawings and as required by the manufacturer, a neoprene or rubber gasket shall be supplied.

## 2.02 DRAINAGE STRUCTURES

- A. Precast Catch Basins:
1. General:
    - a. Grates in paved areas shall conform to ADA Standards for Accessible Design.
    - b. All catch basins to have locking mechanism or screw down grate to frame.
    - c. Provide two grade rings at each catch basin.
  2. 24-inch Basins: "RBT 2412" as supplied by Oldcastle Precast, 888-965-3220, or equal.
    - a. Grating: Round, ADA compliant, and lockable.
- B. Extensions: Provide box extensions, junction boxes and grade rings compatible with structures as necessary to finish at the proper elevation and to facilitate future elevation adjustments as noted below.
- C. Clean Outs: As shown or noted in the Drawings.
- D. French Drain: As shown or noted in the Drawings.

E. Drywell: Manufacturer and product as indicated on the Drawings.

## 2.03 ADDITIONAL MATERIALS

A. Permeable Rock Beneath Synthetic Turf Area: As specified in Section 32 18 14 – Synthetic Turf Base.

B. Drain Rock:

1. Drain Rock shall conform to requirements of Subdrain Trench Drain Rock beneath Synthetic Turf Area: As specified in Section 32 18 14 – Synthetic Turf Base

C. Pea Gravel:

1. Pea gravel shall conform to the following gradation requirements:

U.S. Standard Sieve Mesh	Allowable Range Percent Retained on Sieve
1/2 inch (12.5 mm)	95% passing
1/4 inch (6.3 mm)	45% passing
10 mesh (2.0 mm)	No more than 10% passing
18 mesh (1.0 mm)	No more than 5% passing

2. Supplier: Harbor Sand & Gravel, Redwood City, TMT Enterprises, Inc., San Jose; or equal.

D. French drains shall have a backfill with the following general characteristics:

1. USGA Root Zone Sand,
  - a. 65 percent USGA Root Zone sand conforming to the following sieve range:

Sieve Size	USGA Spec
	Individual % Retained
#4 (4.75mm)	0
#10 (2mm)	0-10% Combined
#18 (1mm)	
#35 (0.5mm)	Minimum 60% Combined
#60 (.25mm)	
#100 (.15mm)	20% Maximum
#140 (.1mm)	5% Maximum Combined
#270 (.05mm)	
Silt (.05-.002mm)	5% Maximum
Clay (<.002mm)	3% Maximum

- b. 15 percent Coconut Coir Fiber.
  - c. 15 percent AXIS Calcined Diatomaceous Earth.
  - d. 5 percent Worm Castings.
2. Supplier: 'Terra Vida French Drain Backfill Mix' by TMT Enterprises. Contact: Matt Moore 408-432-9040

E. Sand Bedding for Storm Drain Piping: Sand conforming to Section 19-3.02F(2) of the Standard Specifications.

- F. Filter Fabric for French Drain: Mirafi 140N, or equal.
- G. Mortar: A 1:2 Portland cement to sand mixture with a minimum of water conform to the applicable sections of the Standard Specifications.
- H. Structural Adhesives for Manholes, Catch Basins, and Junction Boxes: "Ram-Nek" by Henry Company, 800-523-0268, or equal as available.
- I. Reinforcing Bars: As specified in Section 32 32 15 – Landscape Concrete.
- J. Minor Concrete: Comply with requirements of Section 32 32 15 – Landscape Concrete.

### PART 3 - EXECUTION

#### 3.01 EARTHWORK

- A. Excavation, trenching, and backfilling are specified in Section 31 20 00 - Earth Moving.

#### 3.02 PIPING INSTALLATION

- A. General:
  - 1. Pipe shall be installed per manufacturers' instructions and in conformance with the Contracts Documents.
- B. CHDPE Pipe:
  - 1. Pipe shall be installed with a minimum cover under the H-20 live load equal to 12 inches to the top of subgrade elevation.
  - 2. Minimum compaction for pipe subject to H-20 live load is 90 percent in accordance with Section 19, Standard Specifications.
  - 3. CHDPE pipe shall be laid and jointed in accordance with generally accepted practice and the following provisions to provide the required work.

#### 3.03 INSTALLATION OF DRAINAGE STRUCTURES

- A. General: Set rim or cover elevations to specified grades utilizing a minimum of two grade rings (or extensions) at top of drainage structure to facilitate potential elevation adjustments in the future.
- B. Junction Boxes: Install as shown in the Drawings and as follows:
  - 1. Excavate as required.
  - 2. Set on firm, unyielding base. Set on compacted select backfill material if directed by Owner's Representative.
  - 3. Prefabricated units not having a bottom shall be set on a poured-in-place concrete slab with smooth trowel finish. Mortar and properly seal unit to slab, making a watertight connection.
  - 4. Install pipe inlets and outlets to specified elevations. Grout and/or seal all joints to a watertight condition with material per manufacturer's recommendation.
- C. French Drains and Cleanouts: Install as shown in the Drawings.
- D. Drywells, Drinking Fountain Drains, Atrium Drains and Drop Inlets: Install as shown in the Drawings and in accordance with the manufacturer's written recommendations.



### 3.04 IDENTIFICATION

- A. Materials and their installation are specified in Section 31 20 00 - Earth Moving. Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
- B. Use detectable warning tape over nonferrous piping and over edges of underground structures.

### 3.05 FIELD QUALITY CONTROL

- A. The Owner's Representative shall review and accept work at the following stages:
  - 1. Excavated trench with bedding in place prior to any pipe being laid.
  - 2. Pipe laid prior to backfilling. Pipe covered prior to review and acceptance shall be uncovered and re-backfilled at Contractor's expense.
  - 3. Drainage device location and pipe connection.
  - 4. New drainage system shall be flood tested and clean of debris.

### 3.06 MEASUREMENT AND PAYMENT

- A. The contract unit prices paid per each for "CLEANOUT", "JUNCTION BOX", "DRYWELL", and "DRINKING FOUNTAIN DRAIN" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work, complete in place, as shown on the Drawings, as required by these Specifications, and as directed by the Engineer and no additional compensation will be allowed therefor.
- B. The contract unit prices paid per linear foot for "PERFORATED DRAIN LINE", and "STORM DRAIN LINE", shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work, complete in place, as shown on the Drawings, as required by these Specifications, and as directed by the Engineer and no additional compensation will be allowed therefor.

END OF SECTION