



ATTACHMENT E

CONCEPTUAL GRADING PLANS

GRADING NOTES

1.

Call the assigned City of San Marcos Engineering Inspector 24-hours before commencement of work.
2.

Imported material shall be obtained from a legal site.
3.

All cut and fill slopes shall be planted with a mixture of trees, shrubs, and ground cover to control erosion. Slopes eroding shall be installed as soon as practical. Irrigation systems are required and shall be installed for perpetual maintenance of the plant life used for slope stabilization in accordance with Section 17.32.170, Title 19, and Title 20 of the City's Grading Ordinance.
4.

Precise locations/elevations of the existing underground utilities are not known. The Contractor shall be solely responsible for making sufficient explorations to locate all utilities and substructures whether shown on the plans or not and to protect them from any possible damage prior to and during construction. The expense of repair or replacement of said utilities and substructures shall be borne by the Contractor. Contractor shall notify the Engineer-of-Work of any potential conflicts sufficiently in time for construction changes to be made and approved.
5.

The Contractor shall contact the Underground Service Alert at 1-800-422-4133 at least 48 hours prior to excavating to verify the locations of underground facilities of the following utilities:

AT&T
San Diego Gas & Electric
Vallecitos Water District
Cox Communications
Buena Sanitation District
Vista Irrigation District

A Dig Alert Identification Number must be issued before a "Permit to Excavate" is valid per Government Code section 4216.

6.

Approval of these plans by the City does not authorize any work or grading to be performed until the property owner's permission is obtained and a valid grading permit has been issued.
7.

All operations conducted on the premises, including the warming up, repair, arrival, departure or running of any equipment shall be limited to the hours of 7:00 a.m. to 4:30 p.m., Monday through Friday. No work shall be performed on the premises on Saturday, Sunday, or holidays.
8.

All major slopes shall be shaped and trimmed as shown on the plans and rounded into existing slopes to produce a contoured transition from cut or fill faces to natural ground and abutting cut or fill slopes. All stones, roots or other waste matter exposed on excavation or embankment slopes shall be removed and disposed of off-site in a legal manner by the Contractor.
9.

Notwithstanding the minimum standards set forth in the City's Grading Ordinance and the approval of these grading plans, the permittee is responsible for the prevention of damage to adjacent property. No person shall excavate on land so close to the property line as to endanger any system, or any other public or private property without supporting and protecting such property from settling, cracking, erosion, silting, scour or other damage which might result from the grading described on this plan. The City will hold the permittee responsible for correction of non-dedicated improvements, which cause damage to adjacent property.
10.

The Engineer-of-Work shall be notified when construction commences.
11.

Contractor shall be responsible for all construction/grading of slopes, pads, street grades, and infrastructure improvements according to these plans. The Engineer-of-Work shall be contacted when changes or additions are made during the progress of construction or if there is a misunderstanding of these plans or field stakes and an interpretation is needed.
12.

Certification from the registered civil engineer stating that the grading has been completed per the approved plan, and the compaction report from the geotechnical engineer on any required fill areas shall be provided prior to building permits being issued.
13.

Minimum 90% compaction is required in all on-site fill areas with a minimum of 95% compaction six inches (6") below finished subgrade in a public street.
14.

Excavations, fills, and obstructions in Public Places shall conform to the requirements of City Ordinance 2022-1521 subject to the approval of the Director.
15.

Contractor shall be responsible for protecting any monumentation and/or benchmarks. Any monumentation and/or benchmarks, which are disturbed or destroyed by construction, shall be replaced at the Contractor's expense. Such points shall be referenced and replaced with appropriate monumentation by a licensed land surveyor or a registered civil engineer authorized to practice land surveying. A Corner Record or Record of Survey, as appropriate, shall be filed by the licensed land surveyor or registered civil engineer as required by the Land Surveyor's Act.
16.

Dust control measures, such as the periodic wetting down of the bare and exposed areas, shall be utilized at all times during construction to the satisfaction of the Engineering and/or Building Inspectors.
17.

All work shown on these plans to be completed in accordance with City Grading Ordinance Chapter 17.32.
18.

All grading shall be supervised by an individual appropriately licensed under the Business and Professions Code.
19.

The Contractor is responsible for maintaining the adjoining public streets and rights-of-way in a clean and dust free condition within the limitation of the City Municipal Code Section 14.15.030 Illicit "Discharges Prohibited." This section of the Code prohibits the "washing down" of a street into a public storm drain. The continuous use of street sweeping machines may be advisable.
20.

The Contractor shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including the safety of all persons and property. This requirement shall apply continually and not be limited to normal working hours. The Contractor shall defend, indemnify, and hold the owner, the engineer, and the City harmless from any and all liability, real or alleged, in connection with the performance of work on this project excepting for liability arising from the sole negligence of the owner, engineer, or City.
21.

A permit must be obtained from the San Marcos Fire Department prior to any blasting. Separate City permits are required prior to any construction, excavation, storage of materials or any other encroachments.
22.

A right-of-way permit will be required for any work within the City right-of-way.
23.

Accessible parking space(s) shall have a maximum slope not exceeding 2% in any direction.

FIRE NOTES

1.

Fire hydrants shall be CLOW Model 850 with Two 4" and One 2.5" port.
2.

The tops and nozzle caps of the fire hydrant shall be color coded per NFPA 291 based on fire flow:
Class AA - Light Blue Paint - 150 GPM or greater
Class A - Green Paint - 100 to 1499 GPM
Class B - Orange paint - 500 to 999 GPM
Class C - Red Paint - Less than 500 GPM
3.

Color coding shall be from FSC Coatings, Ametco Silicon Poly Plus.

PRIVATE WATER/SEWER NOTES

1.

Private on-site water lines are permitted and inspected under separate permit and are shown on these plans for informational purposes only.
2.

Private on-site Fire lines are permitted and inspected under separate permit and are shown on these plans for informational purposes only.
3.

Trenching and backfill operation for private fire, water, and sewer lines shall be observed by the Public works inspection for general conformance with the geotechnical specifications. Trenches shall also be subject to inspection by the permitting department for additional requirements.
4.

All fire lines and appurtenances downstream of the FSBP assemblies are private throughout this plan set.

General Notes:

1.

Contractor will be responsible for the repair of all damages incurred as a direct result of construction activities. Prior to the final acceptance and approval of improvements shown on these plans all repair and rehabilitation will be done to facilities disrupted by construction activities. All repair will be in conformance to the City of San Marcos Standards.

Flood Zone Statement:

The project is located within Flood Zone X per Flood Insurance Rate Map (FIRM) Number 06073C07936, dated 5/16/2012 as published by the Federal Emergency Management Agency (FEMA) in accordance with the National Flood Insurance Program.

Flood Zone X are areas of minimal flood hazard, outside the 500-year flood and has been identified in the Community Flood Insurance Study as areas determined to be outside the 0.2% annual chance flood.

CITY OF SAN MARCOS

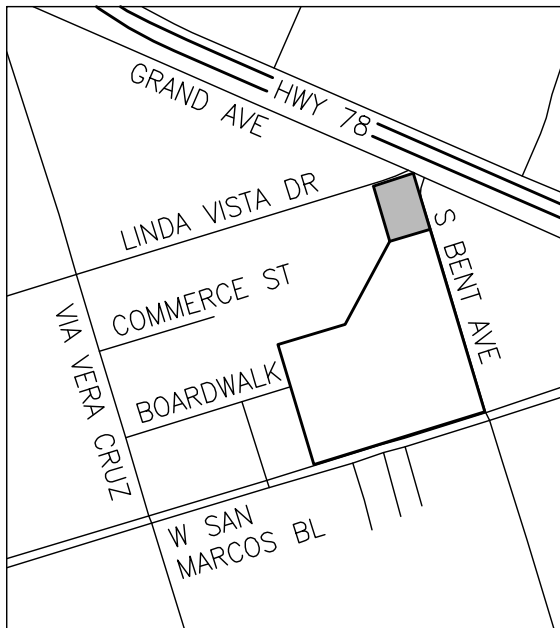
PRECISE GRADING PLANS FOR

COSTCO GAS STATION



VICINITY MAP

NTS.



LOCATION MAP

NTS.

SITE ADDRESS AND ASSESSOR PARCEL NUMBERS

150 S. BENT AVENUE
SAN MARCOS, CA 92078

ASSESSOR PARCEL NO(S): 219-331-43-00

OWNER TENANT

LOST CONTINENT, L.P.
609 E BROKAW RD
SAN JOSE, CA 95112
PHONE: 650.766.5191
CONTACT: GARY GRUMANN

COSTCO WHOLESALE
999 LAKE DRIVE
ISSAQUAH, WA 98027
PHONE: 714.978.5023, EXT. 207
CONTACT: MICHAEL OKUMA

STORM WATER SUMMARY

WQID: 9 37C38318
PROJECT AREA: 14.12 ACRES
DISTURBED AREA: 2.42 ACRES
IMPERVIOUS AREA: 1.94 ACRES
PERVIOUS AREA: 0.48 ACRES
STORM WATER DEVELOPMENT PROJECT TYPE: PRIORITY
CITY BMP ID NO: 5075 THRU 5076
FACILITY TYPE: COMMERCIAL/RETAIL
MAINTENANCE AGREEMENT DOC#:

PROPERTY OWNER ENDORSEMENT OF THESE IMPROVEMENTS:

DECLARATION OF RESPONSIBILITY CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THIS PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS. I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF SAN MARCOS IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME AS ENGINEER OF WORK OF MY RESPONSIBILITIES FOR THE PROJECT DESIGN.



DATE: _____
MARK NERO RCE 80066 EXP. 9/30/26

GEOTECHNICAL ENGINEER CERTIFICATE

THESE PLANS HAVE BEEN REVIEWED BY THE UNDERSIGNED RELATIVE TO GEOTECHNICAL ASPECTS OF THE PLANS AND HAVE BEEN FOUND TO BE IN CONFORMANCE WITH INTENTIONS OF THE FINDINGS AND RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT BY KLEINFELDER, PROJECT NO. 20210191.001A, BRIAN E. CRYSTAL (GE 2639) DATED OCTOBER 22, 2020.

DATE: _____
BRIAN E. CRYSTAL GE 2639 EXP. _____

REFERENCE DRAWINGS:

COSTCO WHOLESALE DEVELOPMENT REQUIREMENTS

DETAIL 08-17 CURB & GUTTER
DETAIL 08-18 CURB & GUTTER AT ISLAND WALK
DETAIL 09-04 CAST-IN-PLACE CONCRETE CURB
DETAO; 09-11 CONCRETE WALKS

SAN DIEGO REGIONAL STANDARD DRAWINGS

STD DWG D-02 CATCH BASIN
STD DWG D-60 PIPE BEDDING AND TRENCH BACKFILL FOR STORM DRAINS

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

STD PLAN 112-2 CURB JOINTS

WORK TO BE DONE

THE IMPROVEMENTS CONSISTS OF THE FOLLOWING WORK TO BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING DOCUMENTS:

- 1)

FOR WORK ON PRIVATE PROPERTY, THE COSTCO WAREHOUSE STANDARDS OF DEVELOPMENT & SPECIFICATIONS (LATEST EDITIONS) ARE INCORPORATED HEREIN
- 2)

SAN DIEGO AREA REGIONAL STANDARD DRAWINGS
- 3)

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREEN BOOK")
- 4)

CITY OF SAN MARCOS GRADING AND EXCAVATION ORDINANCE
- 5)

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARDS PLANS
- 6)

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD SPECIFICATIONS
- 7)

STATE OF CALIFORNIA TRAFFIC CONTROL MANUAL
- 8)

CITY OF SAN MARCOS SUPPLEMENT TO THE 2015 GREENBOOK ("STANDARD SPECIAL PROVISIONS")

LEGEND

ITEM	SYMBOL
PROPERTY LINE	---
STREET CENTER LINE	---
AC PAVING PARKING STALL	[Solid Gray Box]
AC PAVING DRIVE AISLE	[White Box]
PCC PAVING/WALKWAY	[Stippled Box]
LIMITED USE AREA FOR LINE OF SIGHT	[Diagonal Lines Box]
FIRE LATERAL	--- FW --- FW
SEWER LATERAL	--- SS --- SS
STORM DRAIN PIPE	--- SD --- SD
FLOOD BOUNDARY	---
WALL	[Thick Solid Line]
FENCE	--- X --- X
TRAFFIC LIGHT	[Traffic Light Symbol]
EXISTING WATER	--- DW --- DW
EXISTING FIRE HYDRANT	--- FW --- FW
EXISTING SEWER	--- SS --- SS
EXISTING IRRIGATION WATER	--- IW --- IW
EXISTING STORM DRAIN	--- SD --- SD
PROP FW	--- FW --- FW
PROP SS	--- SS --- SS
PROP SD	--- SD --- SD

ABBREVIATIONS

AC ASPHALT CONCRETE
BLDG BUILDING
CL CENTER LINE
EG EDGE OF GUTTER
EX EXISTING
FF FINISHED FLOOR
FS FINISHED SURFACE
FTG FOOTING
FW FIRE WATER
GB GRADE BREAK
ICV IRRIGATION CONTROL VALVE
JT JOINT
MWS MODULAR WETLAND SYSTEM
PA PLANTER AREA
PCC PORTLAND CONCRETE CEMENT
PCR POINT OF CURB RETURN
PL PROPERTY LINE
PROP PROPOSED
ROW RIGHT OF WAY
SCE SOUTHERN CALIFORNIA EDISON
SCD SEWER CLEAN OUT
SD STORM DRAIN
SS SEWER LINE
TC TOP OF CURB
TF TOP OF FOOTING
TS TOP OF STEM
TW TOP OF WALL

SHEET INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	CONSTRUCTION NOTES & QUANTITIES
3-4	DEMOLITION PLAN
5	INDEX MAP
6-7	PRECISE GRADING PLAN
8	SECTIONS & DETAILS
9	DETAILS
10	STORM DRAIN PLAN
11-19	STORM DRAIN DETAILS
20	EROSION CONTROL PLAN
21	LINDA VISTA STRIPING
22	BIKE & PEDESTRIAN PATH STUDY

SOURCE OF AERIAL TOPO

AERIAL SURVEY CONDUCTED BY ROBERT J. LUNG & ASSOCIATES ON JULY 8, 2020

PRELIMINARY HYDROLOGY/HYDRAULIC REPORT

THE HYDROLOGY/HYDRAULIC REPORT WAS PREPARED BY FUSCOE ENGINEERING (08/2023)

BENCHMARK ADJUSTMENT

TO ADJUST FROM NGVD 29 (ROS 13928) TO NAVD 88 (ROS 23731)

NGVD 29 ELEVATION + 2.287 = NAVD 88 ELEVATION
NGVD BENCHMARK OF 543.629 + 2.287 = 543.786 (NAVD 88)

PER CITY OF SAN MARCOS BENCHMARK CONVERSION, DATED SEPTEMBER 21, 2011

PREPARED BY:

15535 Sand Canyon Ave, Suite 100
Irvine, California 92618
949.474.1960
fuscoe.com

MARK NERO RCE NO.80066 EXP. 09/30/26

ENGINEER OF WORK	BENCH MARK	CITY OF SAN MARCOS CONCEPTUAL GRADING PLANS FOR: COSTCO GAS STATION TITLE SHEET	PLANNING PROJECT NO. CUP23-0004
By: FUSCOE ENGINEERING, INC Date:08/2024 Name: MARK NERO R.C.E.: 80066 exp: 9/30/26	Description: 3" BRASS DISC IN STD ST C/L WELL NON ENCLOSURE, STAMPED "CSM RCE 16421" Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED & TIED USING GPS ON ROS 13928 Record From: RECORD OF SURVEY 13928 Elev.: 543.629 Datum: NGVD29		Sheet 1 of 20

VWD NO. 246122

PRIVATE ON-SITE SYSTEMS FOR WATER

1. WATER LINES SHALL HAVE A MINIMUM COVER OF 42 INCHES. SEWER LINES SHALL HAVE A MINIMUM COVER OF 5 FEET.

2. CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES 48 HOURS PRIOR TO CONSTRUCTION. A VALID UNDERGROUND SERVICE ALERT TICKET SHALL BE ON FILE.

VALLECITOS WATER DISTRICT

1-760-744-0460

COX COMMUNICATION

1-800-227-2600

SDG&E

1-800-227-2600

AT&T

1-800-227-2600

UNDERGROUND SERVICE ALERT.

811

3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL SUBSTRUCTURES, WHETHER SHOWN ON THE PLANS OR NOT, AND PROTECT THEM FROM DAMAGE. THE ACTUAL LOCATION AND DEPTH OF ALL EXISTING WATER AND SEWER LINES IS TO BE VERIFIED BY THE CONTRACTOR AND ANY DISCREPANCY IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF WORK FOR CORRECTION AND THEN SUBMITTED TO THE DISTRICT FOR APPROVAL.

4. NEITHER THE ENGINEER, OWNER NOR THE VALLECITOS WATER DISTRICT SHALL BE RESPONSIBLE FOR THE ENFORCEMENT OF SAFETY STANDARDS.

5. A PRECONSTRUCTION CONFERENCE MEETING SHALL BE HELD A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION.

6. A SIGNED SET OF PLANS DOES NOT IMPLY THAT CONSTRUCTION MAY BEGIN. THE CONTRACTOR MUST CONTACT THE VALLECITOS WATER DISTRICT ENGINEERING DEPARTMENT TO CONFIRM.

7. ALL WORK DONE IN OR NEAR VALLECITOS WATER DISTRICT FACILITIES SHALL BE DONE ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS OF THE VALLECITOS WATER DISTRICT.

8. PRIOR TO CROSSING EXISTING WATER OR SEWER FACILITIES, CONTRACTOR SHALL SUBMIT EQUIPMENT SPECIFICATIONS, WEIGHT AND DEFLECTION CALCULATIONS FOR APPROVAL.

9. CONTRACTOR SHALL VERIFY AND REQUEST CONSTRUCTION WATER SOURCE AND AVAILABILITY PRIOR TO START OF GRADING.

10. STATE HEALTH DEPARTMENT REQUIRES CERTIFIED BACKFLOW DEVICES ON ALL HARD PLUMBED CONNECTIONS TO DISTRICT CONSTRUCTION METERS.

11. ACCESSING OR WORKING WITHIN VALLECITOS WATER DISTRICT EASEMENT REQUIRES INSPECTION.

12. DISTRICT SHALL ASSIGN AN INSPECTOR FOR GRADING JOBS WHERE DISTRICT FACILITIES ARE IMPACTED.

13. A BLASTING PLAN SHALL BE SUBMITTED FOR DISTRICT APPROVAL PRIOR TO THE USE OF EXPLOSIVES NEAR DISTRICT FACILITIES.
- DEMOLITION REMOVAL NOTES
- | NO. | DESCRIPTION | QTY | UNIT |
|-----|---|--------|------|
| 1 | PROTECT IN PLACE, ITEM PER PLAN | — | — |
| 2 | REMOVE AC PAVEMENT AND AGGREGATE BASE | 88,000 | SF |
| 3 | REMOVE STORM DRAIN PIPE | 200 | LF |
| 4 | REMOVE CONCRETE CURB | 3,100 | LF |
| 5 | REMOVE BOLLARD | 2 | EA |
| 6 | REMOVE CONCRETE DRIVEWAY | 1,200 | SF |
| 7 | REMOVE TREE/LANDSCAPE AND IRRIGATION | — | — |
| 8 | REMOVE CART CORRAL | 1 | EA |
| 9 | REMOVE PARKING LOT LIGHT, CONDUITS, CONDUCTORS & FOOTINGS. ENSURE CONTINUITY OF CONDUCTORS FOR PARKING LOT LIGHTS REMAINING TO THE SOUTH. COORDINATE ELECTRICAL CONNECTION FOR REMAINING LIGHT STANDARDS WITH ELECTRICAL PLAN | 15 | EA |
| 10 | SAWCUT | 1,400 | LF |
| 11 | REMOVE DRAINAGE INLET | 1 | EA |
| 12 | SANDBLAST & REMOVE PAVEMENT MARKING | 1 | LS |
- PRECISE GRADING NOTES
- | NO. | DESCRIPTION | QTY | UNIT |
|-----|--|--------|------|
| 1 | CONSTRUCT 3" AC OVER 5" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS (PARKING STALL) | 5,800 | SF |
| 2 | CONSTRUCT 5" AC OVER 6.5" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS (DRIVE AISLE) | 42,000 | SF |
| 3 | CONSTRUCT 7" PCC PAVEMENT OVER 4" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS | 33,000 | SF |
| 4 | CONSTRUCT 4" CURB & GUTTER PER MODIFIED COSTCO STD. DETAIL 08-17, SEE DETAIL 4 ON SHEET 9, JOINTS PER SPPWC 112-2 | 210 | LF |
| 5 | CONSTRUCT 6" CURB & GUTTER PER COSTCO STD. DETAIL 08-17, SEE DETAIL 4 ON SHEET 9, JOINTS PER SPPWC 112-2 | 550 | LF |
| 6 | CONSTRUCT 6" CURB ONLY PER COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPPWC 112-2 | 1,350 | LF |
| 7 | CONSTRUCT 0" CURB PER DETAIL 7 ON SHEET 9, JOINTS PER SPPWC 112-2 | 10 | LF |
| 8 | CONSTRUCT 0" TO 6" CURB TRANSITION PER DETAIL 8 ON SHEET 9 | 5 | LF |
| 9 | CONSTRUCT 4" TO 6" CURB TRANSITION PER DETAIL 9 ON SHEET 9 | 90 | LF |
| 10 | CONSTRUCT 24" WIDE CONCRETE CHANNEL PER DETAIL 10 ON SHEET 9 | 20 | LF |
| 11 | CONSTRUCT 3" WIDE RIBBON GUTTER PER DETAIL 11 ON SHEET 9 | 110 | LF |
| 12 | CONSTRUCT 8" WIDE RIBBON GUTTER PER DETAIL 12 ON SHEET 9 | 40 | LF |
| 13 | CONSTRUCT 12" WIDE CONCRETE STRIP PER COSTCO STD. DETAIL 08-18, SEE DETAIL 13 ON SHEET 9 | 50 | LF |
| 14 | CONSTRUCT 6" CONCRETE SIDEWALK; THICKNESS, COLOR, TEXTURE, AND SCORING PER COSTCO STD DETAIL 09-11, SEE DETAIL 14 ON SHEET 9 | 200 | SF |
| 15 | CONSTRUCT LOCAL DEPRESSION PER CITY OF SAN MARCOS STD. XXXXX | 3 | EA |
| 16 | PROPOSED STALL STRIPING, SIGNAGE, AND PAVEMENT MARKINGS PER ARCHITECT'S PLANS | 1 | LS |
| 17 | INSTALL CART CORRAL PER ARCHITECT'S PLANS | — | — |
| 18 | INSTALL BOLLARDS PER ARCHITECT'S PLANS | — | — |
| 19 | INSTALL WIRE BARRIER PER ARCHITECT'S PLANS | — | — |
| 20 | SAWCUT STRAIGHT AND CLEAN | 550 | LF |
| 21 | CONSTRUCT CONTROLLER ENCLOSER PER ARCHITECT'S PLANS, FOR AN ENLARGED DETAIL OF GRADING AROUND THE ENCLOSURE, SEE DETAIL ON SHEET 8 | 1 | EA |
| 22 | CONSTRUCT 0" TO 5" CURB TRANSITION PER DETAIL 22 ON SHEET 9 | 20 | LF |
| 23 | CONSTRUCT 5" TO 4" CURB TRANSITION PER DETAIL 23 ON SHEET 9 | 10 | LF |
| 24 | CONSTRUCT 4" CURB ONLY PER MODIFIED COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPPWC 112-2 | 50 | LF |
| 25 | CONSTRUCT 4" CURB ONLY PER COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPPWC 112-2 | 400 | LF |
- STORM DRAIN NOTES
- | NO. | DESCRIPTION | QTY | UNIT |
|-----|---|-------|------|
| 30 | INSTALL 4" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60 | 240 | LF |
| 31 | INSTALL 6" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60 | 540 | LF |
| 32 | INSTALL 12" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60 | 320 | LF |
| 33 | INSTALL 4" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS | 21 | EA |
| 34 | INSTALL 6" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS | 16 | EA |
| 35 | INSTALL 12" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS | 11 | EA |
| 36 | INSTALL 6" DRAINAGE CLEANOUT STRUCTURE (DCO), SEE DETAIL 36 ON SHEET 12 | 4 | EA |
| 37 | CONSTRUCT 24"x24" CATCH BASIN WITH TRAFFIC RATED GRATE, JENSEN DRAIN INLET BOX OR APPROVED EQUAL, SEE DETAIL 37 ON SHEET 12 | 1 | EA |
| 38 | CONSTRUCT 36"x36" CATCH BASIN WITH TRAFFIC RATED STEEL PLATE, JENSEN DRAIN INLET BOX OR APPROVED EQUAL, SEE DETAIL 38 ON SHEET 12 | 1 | EA |
| 39 | CONSTRUCT CATCH BASIN PER SAN DIEGO REGIONAL STD. DWG. D-02 | 2 | EA |
| 40 | INSTALL MODULAR WETLAND SYSTEM PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS & DETAILS ON SHEET 13 | 3 | EA |
| 41 | INSTALL OIL/WATER SEPARATOR PER DETAIL 41 ON SHEET 14 | 1 | EA |
| 42 | NOT USED | — | — |
| 43 | INSTALL PUMP AND SUMP STRUCTURE PER DETAIL 43 ON SHEET 15 | 2 | EA |
| 44 | CONSTRUCT ADS STORMTECH CHAMBER SYSTEM PER DETAIL 44 ON SHEETS 16-18 | 6,200 | SF |
| 45 | INSTALL DVERT PER DETAIL 47 ON SHEET 19 | 1 | EA |
| 46 | POINT OF CONNECTION TO GAS STATION CANOPY ROOF DRAIN, SEE TYPICAL SECTION 'B' ON SHEET 14 | 18 | EA |
| 47 | INSTALL 8" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60 | 20 | LF |
| 48 | INSTALL 8" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS | 1 | EA |
| 49 | CONSTRUCT CONCRETE LUG CONNECTION PER SAN DIEGO REGIONAL STD. DWG. D-63 | 2 | EA |
- PREPARED BY:
- FUSCOE

ENGINEERING

15535 Sand Canyon Ave, Suite 100
Irvine, California 92618
949.474.1960

fuscoe.com

REGISTERED PROFESSIONAL ENGINEER

MARK K. NERO

NO. 80066

CIVIL

STATE OF CALIFORNIA

MARK NERO RCB NO.80066 EXP. 09/30/26

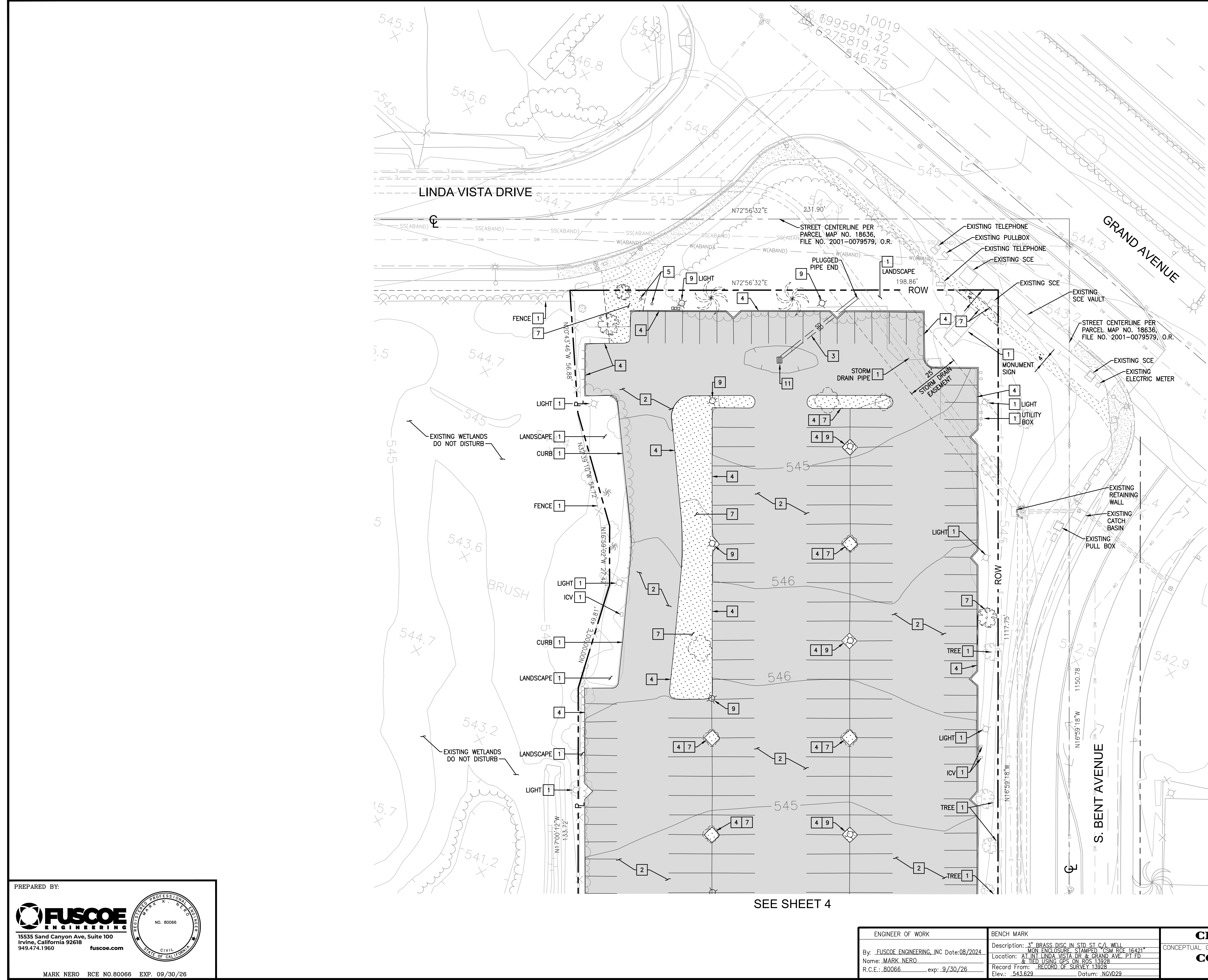
ENGINEER OF WORK	BENCH MARK	CITY OF SAN MARCOS CONCEPTUAL GRADING PLANS FOR: COSTCO GAS STATION CONSTRUCTION NOTES & QUANTITIES	PLANNING PROJECT NO. CUP23-0004
By: FUSCOE ENGINEERING, INC Date:08/20/24	Description: 3" BRASS DISC IN STD ST C/L WELL		
Name: MARK NERO	Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED & TIED USING GPS ON ROS 13928		
R.C.E.: 80066 exp: 9/30/26	Record From: RECORD OF SURVEY 13928		
	Elev.: 543.629 Datum: NGVD29		
		Sheet 2 of 20	

F:\PROJECTS\758\070\PLANS\GRADING\GAS STATION\758-070PG02N1.DWG (12-23-24 1:55:27PM) Plotted by: jespada

CONCEPT PLAN SET

COSTCO GAS STATION
PRECISE GRADING PLAN

12/23/2024



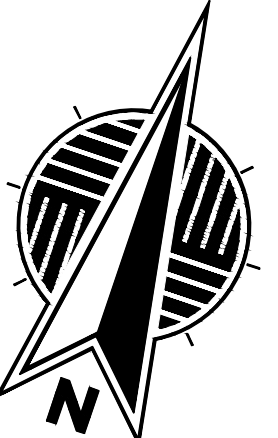
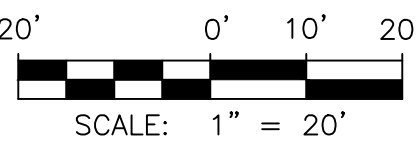
- NOTES:
- IT IS THE CONTRACTORS RESPONSIBILITY TO PROPERLY DISPOSE OF REMOVED ITEMS THAT ARE NOT TO BE REUSED.
 - BUILDING DEMOLITION ITEMS ARE NOT COVERED BY THIS PLAN. SEE ARCHITECTURAL PLAN FOR BUILDING DEMOLITION.
 - SAWCUT ALL LINES CLEAN & STRAIGHT
 - STRIPING IS NOT COVERED BY THIS PLAN, SEE ARCHITECTURAL PLANS FOR PAVEMENT STRIPING, INCLUSIVE OF DEMOLITION AND CONSTRUCTION.
 - PRIOR TO PAVEMENT DEMOLITION, REVIEW ASPHALT PAVEMENT CONSTRUCTION NOTES. CONTRACTOR MAY OPTION TO GRIND AND OVERLAY SOME PAVEMENTS DENOTED AS REMOVALS, SEE CONSTRUCTION NOTES FOR ADDITIONAL INFORMATION.

- LEGEND
- REMOVE ENTIRE PAVEMENT SECTION
 - REMOVE CONCRETE PAVEMENT
 - REMOVE LANDSCAPE
 - SAWCUT LIMITS

DEMOLITION REMOVAL NOTES	
NO.	DESCRIPTION
1	PROTECT IN PLACE, ITEM PER PLAN
2	REMOVE AC PAVEMENT AND AGGREGATE BASE
3	REMOVE STORM DRAIN PIPE
4	REMOVE CONCRETE CURB
5	REMOVE BOLLARD
7	REMOVE TREE/LANDSCAPE AND IRRIGATION
9	REMOVE PARKING LOT LIGHT, CONDUITS, CONDUCTORS & FOOTINGS. ENSURE CONTINUITY OF CONDUCTORS FOR PARKING LOT LIGHTS REMAINING TO THE SOUTH. COORDINATE ELECTRICAL CONNECTION FOR REMAINING LIGHT STANDARDS WITH ELECTRICAL PLAN
11	REMOVE DRAINAGE INLET

NOTE TO CONTRACTOR:
ALL WORK IN CITY RIGHT-OF-WAY TO BE PERFORMED WITH ROW PERMIT

ENGINEER OF WORK AS-BUILT CERTIFICATE		
MARK NERO, PE	RCE 80066	EXP. 9/30/2026
DATE		



PREPARED BY:

15535 Sand Canyon Ave, Suite 100
Irvine, California 92618
949.474.1960
fuscoe.com

MARK NERO RCE NO.80066 EXP. 09/30/26

SEE SHEET 4

ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date: 08/20/24 Name: MARK NERO R.C.E.: 80066 exp: 9/30/26	Description: 3" BRASS DISC IN STD ST C/L WELL NON ENCLOSURE STANDARD CSW RCE 16421 Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED & TIED USING OPS ON ROS 13928 Record From: RECORD OF SURVEY 13928 Elev.: 543.629 Datum: NGVD29

CITY OF SAN MARCOS
CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
DEMOLITION PLAN

PLANNING PROJECT NO. CUP23-0004
Sheet 3 of 20

PREPARED BY:

FUSCOE

ENGINEERING

15535 Sand Canyon Ave, Suite 100
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949.474.1960

REGISTERED PROFESSIONAL ENGINEER
MARK K. NERO
NO. 80066
CIVIL
STATE OF CALIFORNIA

fuscoe.com

MARK NERO RCE NO.80066 EXP. 09/30/26

SEE SHEET 3

NOTES:

- IT IS THE CONTRACTORS RESPONSIBILITY TO PROPERLY DISPOSE OF REMOVED ITEMS THAT ARE NOT TO BE REUSED.
- BUILDING DEMOLITION ITEMS ARE NOT COVERED BY THIS PLAN. SEE ARCHITECTURAL PLAN FOR BUILDING DEMOLITION.
- SAWCUT ALL LINES CLEAN & STRAIGHT
- STRIPING IS NOT COVERED BY THIS PLAN, SEE ARCHITECTURAL PLANS FOR PAVEMENT STRIPING, INCLUSIVE OF DEMOLITION AND CONSTRUCTION.
- PRIOR TO PAVEMENT DEMOLITION, REVIEW ASPHALT PAVEMENT CONSTRUCTION NOTES. CONTRACTOR MAY OPTION TO GRIND AND OVERLAY SOME PAVEMENTS DENOTED AS REMOVALS, SEE CONSTRUCTION NOTES FOR ADDITIONAL INFORMATION.

LEGEND

- REMOVE ENTIRE PAVEMENT SECTION
- REMOVE CONCRETE PAVEMENT
- REMOVE LANDSCAPE
- SAWCUT LIMITS

DEMOLITION REMOVAL NOTES	
NO.	DESCRIPTION
1	PROTECT IN PLACE, ITEM PER PLAN
2	REMOVE AC PAVEMENT AND AGGREGATE BASE
4	REMOVE CONCRETE CURB
6	REMOVE CONCRETE DRIVEWAY
7	REMOVE TREE/LANDSCAPE AND IRRIGATION
8	REMOVE CART CORRAL
9	REMOVE PARKING LOT LIGHT, CONDUITS, CONDUCTORS & FOOTINGS. ENSURE CONTINUITY OF CONDUCTORS FOR PARKING LOT LIGHTS REMAINING TO THE SOUTH. COORDINATE ELECTRICAL CONNECTION FOR REMAINING LIGHT STANDARDS WITH ELECTRICAL PLAN
10	SAWCUT
12	SANDBLAST & REMOVE PAVEMENT MARKING

NOTE TO CONTRACTOR:
ALL WORK IN CITY RIGHT-OF-WAY TO BE PERFORMED WITH ROW PERMIT

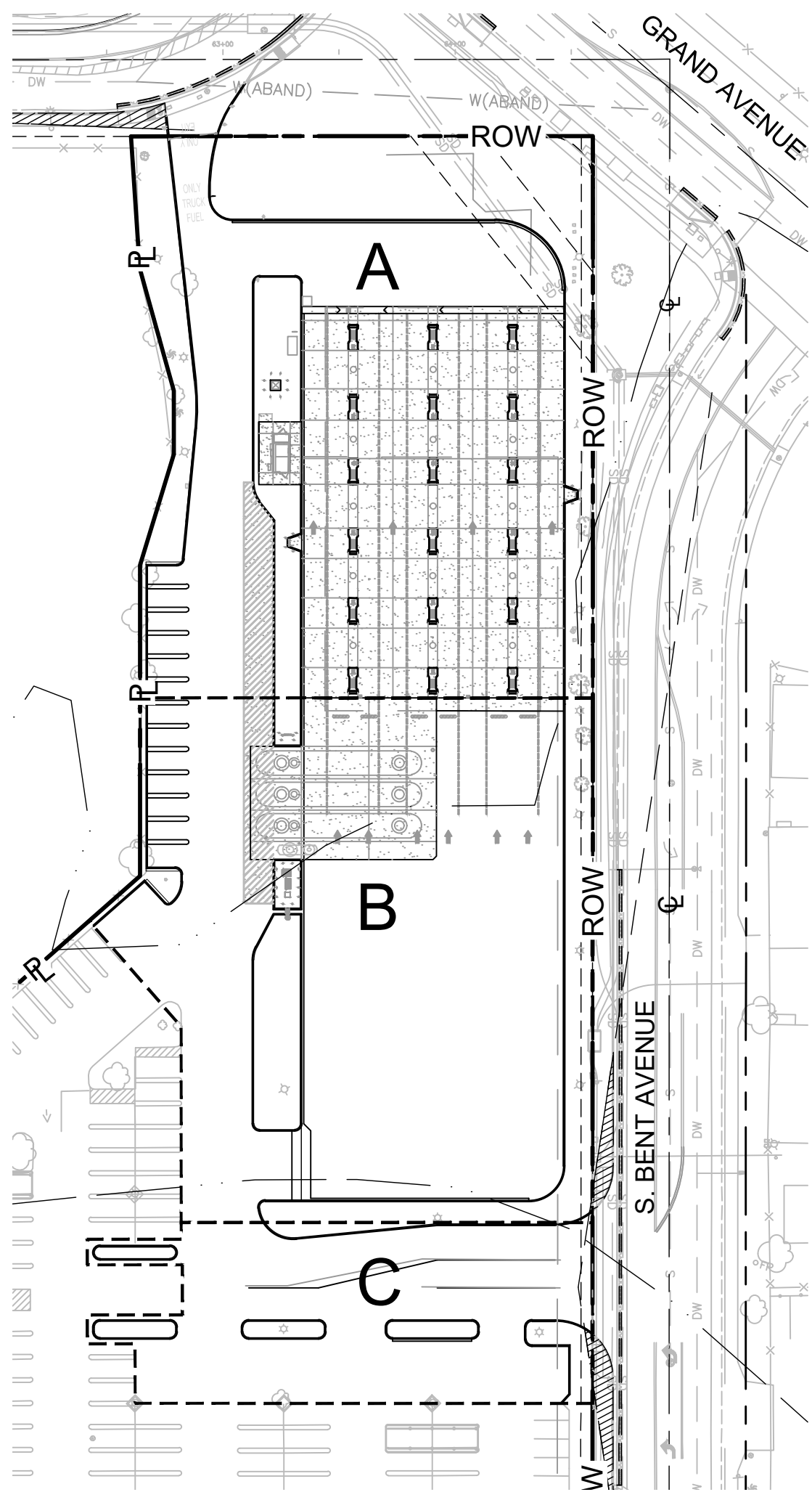
ENGINEER OF WORK AS-BUILT CERTIFICATE		
MARK NERO, PE	RCE 80066	EXP. 9/30/2026
DATE		

ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date: 08/20/24	Description: 3" BRASS DISC IN STD ST C/L WELL
Name: MARK NERO	Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED & TIED USING GPS ON ROS 13928
R.C.E.: 80066 exp: 9/30/26	Record From: RECORD OF SURVEY 13928
	Elev.: 543.629 Datum: NGVD29

CITY OF SAN MARCOS
CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
DEMOLITION PLAN

PLANNING PROJECT NO.
CUP23-0004
Sheet 4 of 20

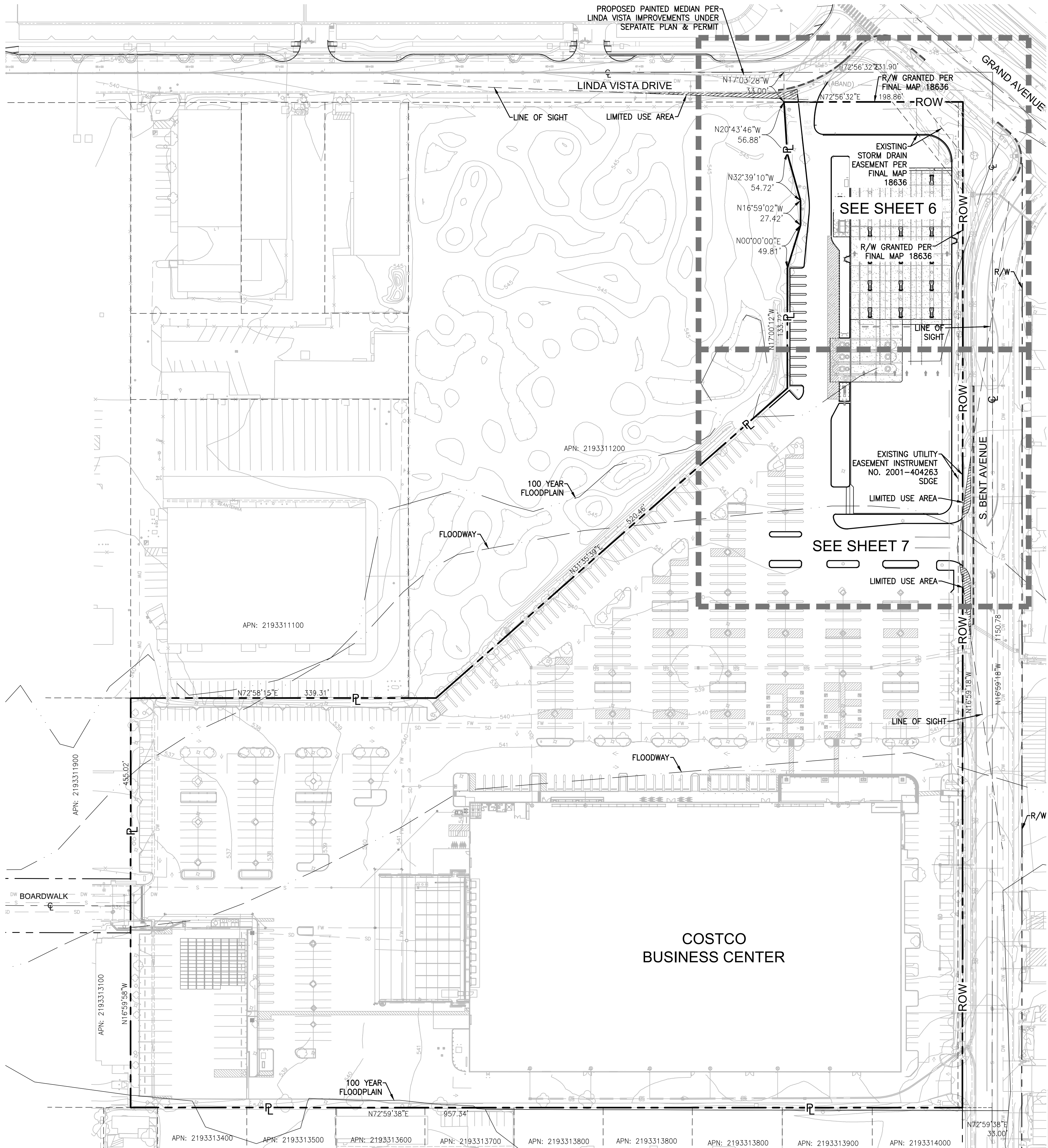
12/23/2024 COSTCO GAS STATION PRECISE GRADING PLAN CONCEPT PLAN SET



PERVIOUS / IMPERVIOUS AREAS

	PERVIOUS	IMPERVIOUS	SUBAREA
A	13,404 SF	32,715 SF	46,119 SF
B	6,415 SF	36,398 SF	42,813 SF
C	1,489 SF	13,735 SF	15,224 SF

	PERVIOUS	IMPERVIOUS
A	29%	71%
B	15%	85%
C	10%	90%



PRIVATE ENGINEER'S NOTICE TO CONTRACTOR(S):

- THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES AND/OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. APPROVAL OF THESE PLANS BY THE CITY OF SAN MARCOS DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OR COMPLETENESS OF THE LOCATION OR THE EXISTENCE OR NON-EXISTENCE OF ANY UTILITY AND/OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THE CONTRACTOR IS REQUIRED TO TAKE ALL DUE PRECAUTIONARY MEANS TO PROTECT THE UTILITIES OF RECORD OR NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
- IT IS REQUESTED THAT THE GRADING CONTRACTOR NOTIFY THIS PRIVATE ENGINEER BY CALLING AT LEAST 48 HOURS BEFORE COMPLETION OF THE GRADING OPERATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
- UNAUTHORIZED CHANGES AND USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS AND THE CITY OF SAN MARCOS.
- IF THE PRESENCE OF ASBESTOS CONTAINING MATERIAL (ACM) IS SUSPECTED DUE TO VISUAL INSPECTION ASSOCIATED WITH RENOVATION AND/OR DEMOLITION ACTIVITIES, THE GRADING CONTRACTOR SHALL PERFORM TESTING PRIOR TO SUCH ACTIVITIES. ANY IDENTIFIED ACM MUST BE ADDRESSED APPROPRIATELY AND IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.

GRADING NOTES:

- DAMAGE TO EXISTING PROPERTY OUTSIDE OF IMPROVEMENT AREAS ARE TO BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
- STRIPING AND SIGNING OF THE PARKING LOT PER ARCHITECT'S PLANS.
- ENSURE THAT ALL PROPOSED PAVEMENT JOINS EXISTING PAVEMENT FLUSH WITH NO EXPOSED VERTICAL FACES OR EDGES. CONCRETE GRADE AND SLOPES ARE SUBJECT TO ADA INSPECTION.
- CURB RADIUS ARE 3' AT FACE OF CURB UNLESS NOTED OTHERWISE.
- THE REGULATORY FLOODWAY SHOWN PER LOMR NO:12-09-1029P, DATED MARCH 7, 2013.

PREPARED BY:

FUSCOE ENGINEERING

15535 Sand Canyon Ave, Suite 100
Irvine, California 92618
949.474.1960 fuscocoe.com

REGISTERED PROFESSIONAL ENGINEER
MARK A. NERO
NO. 80066
CIVIL
STATE OF CALIFORNIA

MARK NERO RCE NO.80066 EXP. 09/30/26

ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date: 08/2024 Name: MARK NERO R.C.E.: 80066 exp: 9/30/26	Description: 3" BRASS DISC IN STD ST C/L WELL NON ENCLOSURE STAMPED "C" RCE 16421" Location: AT INT LINDA VISTA DR & GRAND AVE. PT ED & TIED USING OPS ON ROS 13928 Record From: RECORD OF SURVEY 13928 Elev.: 543.629 Datum: NGVD29

CITY OF SAN MARCOS

CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
INDEX MAP

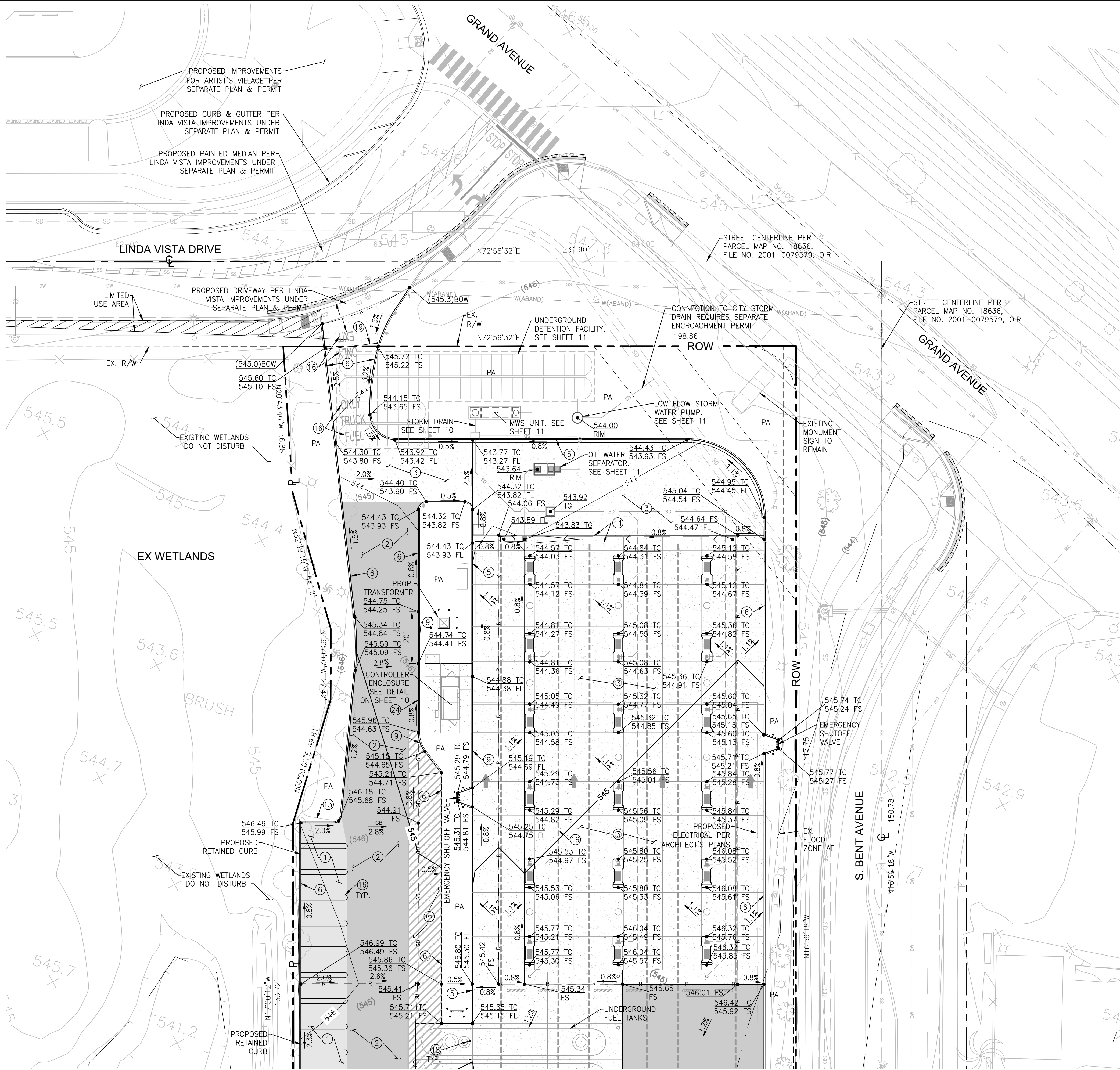
PLANNING PROJECT NO.
CUP23-0004

Sheet 5 of 20

PREPARED BY:



MARK NERO RCB NO.80066 EXP. 09/30/26



SEE SHEET 7

GRADING NOTES:

- DAMAGE TO EXISTING PROPERTY OUTSIDE OF IMPROVEMENT AREAS ARE TO BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
- STRIPING AND SIGNING OF THE PARKING LOT PER ARCHITECT'S PLANS.
- ENSURE THAT ALL PROPOSED PAVEMENT JOINS EXISTING PAVEMENT FLUSH WITH NO EXPOSED VERTICAL FACES OR EDGES. CONCRETE GRADE AND SLOPES ARE SUBJECT TO ADA INSPECTION.
- CURB RADIUS ARE 3' AT FACE OF CURB UNLESS NOTED OTHERWISE.
- THE REGULATORY FLOODWAY SHOWN PER LOMR NO:12-09-1029P, DATED MARCH 7, 2013.

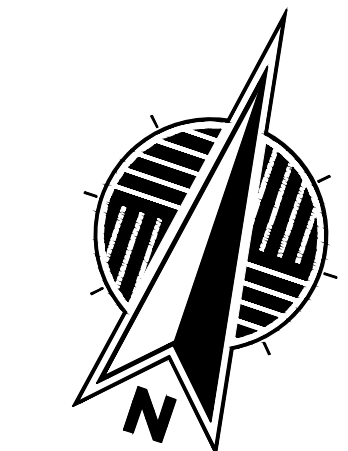
PRECISE GRADING NOTES

NO.	DESCRIPTION
1	CONSTRUCT 3" AC OVER 5" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS (PARKING STALL)
2	CONSTRUCT 5" AC OVER 6.5" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS (DRIVE AISLE)
3	CONSTRUCT 7" PCC PAVEMENT OVER 4" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS
4	CONSTRUCT 4" CURB & GUTTER PER MODIFIED COSTCO STD. DETAIL 08-17, SEE DETAIL 4 ON SHEET 9, JOINTS PER SPPWC 112-2
5	CONSTRUCT 6" CURB & GUTTER PER COSTCO STD. DETAIL 08-17, SEE DETAIL 4 ON SHEET 9, JOINTS PER SPPWC 112-2
6	CONSTRUCT 6" CURB ONLY PER COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPPWC 112-2
7	CONSTRUCT 0" CURB PER DETAIL 7 ON SHEET 9, JOINTS PER SPPWC 112-2
8	CONSTRUCT 0" TO 6" CURB TRANSITION PER DETAIL 8 ON SHEET 9
9	CONSTRUCT 4" TO 6" CURB TRANSITION PER DETAIL 9 ON SHEET 9
10	CONSTRUCT 24" WIDE CONCRETE CHANNEL PER DETAIL 10 ON SHEET 9
11	CONSTRUCT 3" WIDE RIBBON GUTTER PER DETAIL 11 ON SHEET 9
12	CONSTRUCT 8" WIDE RIBBON GUTTER PER DETAIL 12 ON SHEET 9
13	CONSTRUCT 12" WIDE CONCRETE STRIP PER COSTCO STD. DETAIL 08-18, SEE DETAIL 13 ON SHEET 9
14	CONSTRUCT 6" CONCRETE SIDEWALK; THICKNESS, COLOR, TEXTURE, AND SCORING PER COSTCO STD DETAIL 09-11, SEE DETAIL 14 ON SHEET 9
15	CONSTRUCT LOCAL DEPRESSION PER CITY OF SAN MARCOS STD. XXXXX
16	PROPOSED STALL STRIPING, SIGNAGE, AND PAVEMENT MARKINGS PER ARCHITECT'S PLANS
17	INSTALL CART CORRAL PER ARCHITECT'S PLANS
18	INSTALL BOLLARDS PER ARCHITECT'S PLANS
19	INSTALL WIRE BARRIER PER ARCHITECT'S PLANS
20	SAWCUT STRAIGHT AND CLEAN
21	CONSTRUCT CONTROLLER ENCLOSURE PER ARCHITECT'S PLANS, FOR AN ENLARGED DETAIL OF GRADING AROUND THE ENCLOSURE, SEE DETAIL ON SHEET 8
22	CONSTRUCT 0" TO 5" CURB TRANSITION PER DETAIL 22 ON SHEET 9
23	CONSTRUCT 5" TO 4" CURB TRANSITION PER DETAIL 23 ON SHEET 9
23	CONSTRUCT 4" CURB ONLY PER MODIFIED COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPPWC 112-2
24	CONSTRUCT 4" CURB ONLY PER MODIFIED COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPPWC 112-2

ENGINEER OF WORK AS-BUILT CERTIFICATE

MARK NERO, PE RCE 80066 EXP. 9/30/2026

DATE



SCALE: 1" = 20'

CITY OF SAN MARCOS

CONCEPTUAL GRADING PLANS FOR:

COSTCO GAS STATION

PRECISE GRADING PLAN

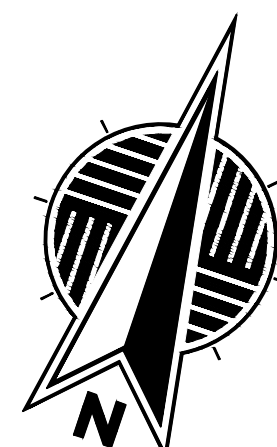
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CUP23-0004

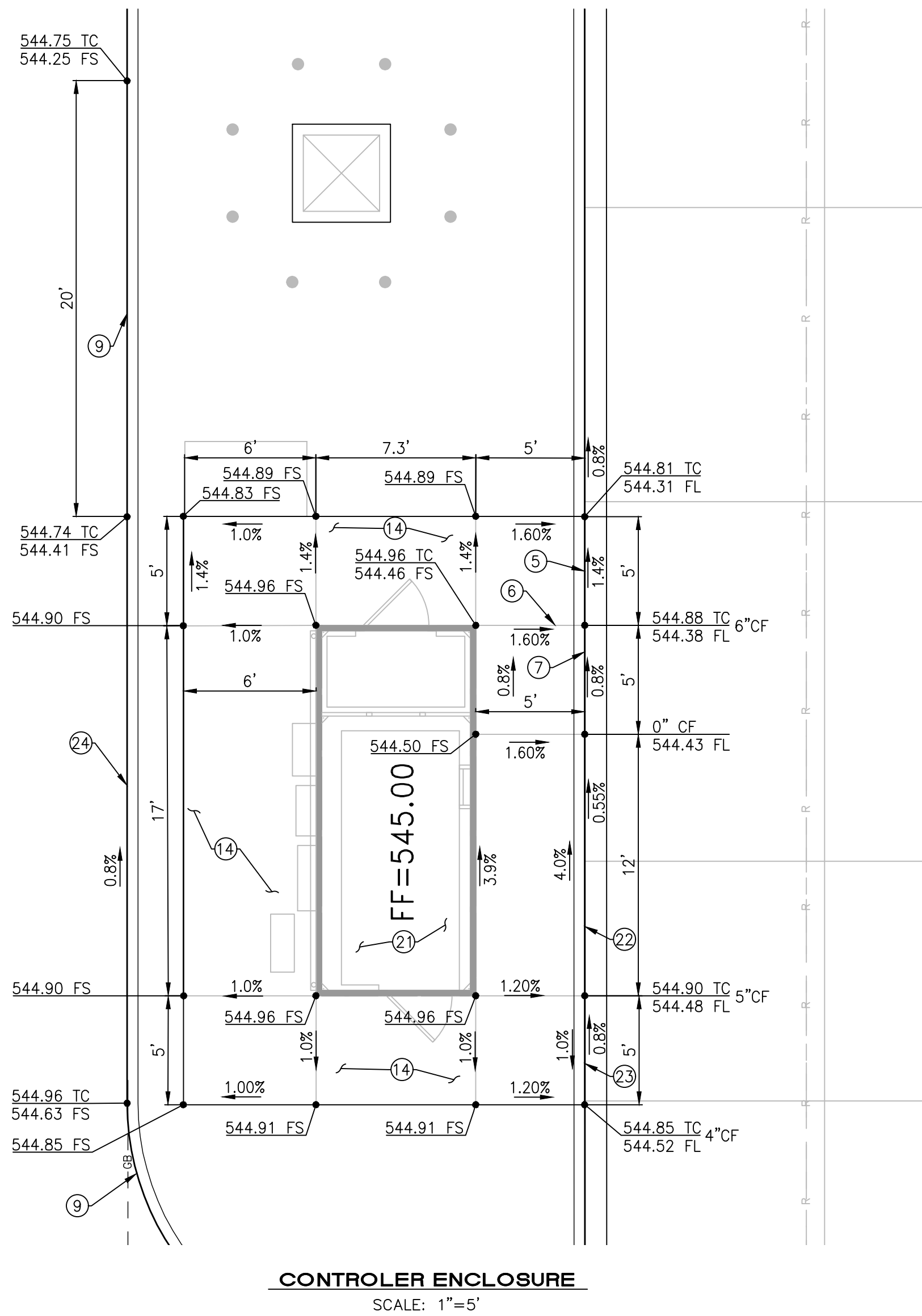
Sheet 6 of 20

1. DAMAGE TO EXISTING PROPERTY OUTSIDE OF IMPROVEMENT AREAS ARE TO BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
2. STRIPING AND SIGNING OF THE PARKING LOT PER ARCHITECT'S PLANS.
3. ENSURE THAT ALL PROPOSED PAVEMENT JOINS EXISTING PAVEMENT FLUSH WITH NO EXPOSED VERTICAL FACES OR EDGES. CONCRETE GRADE AND SLOPES ARE SUBJECT TO ADA INSPECTION.
4. CURB RADIUS ARE 3' AT FACE OF CURB UNLESS NOTED OTHERWISE.
5. THE REGULATORY FLOODWAY SHOWN PER LOMR NO:12-09-1029P, DATED MARCH 7, 2013.

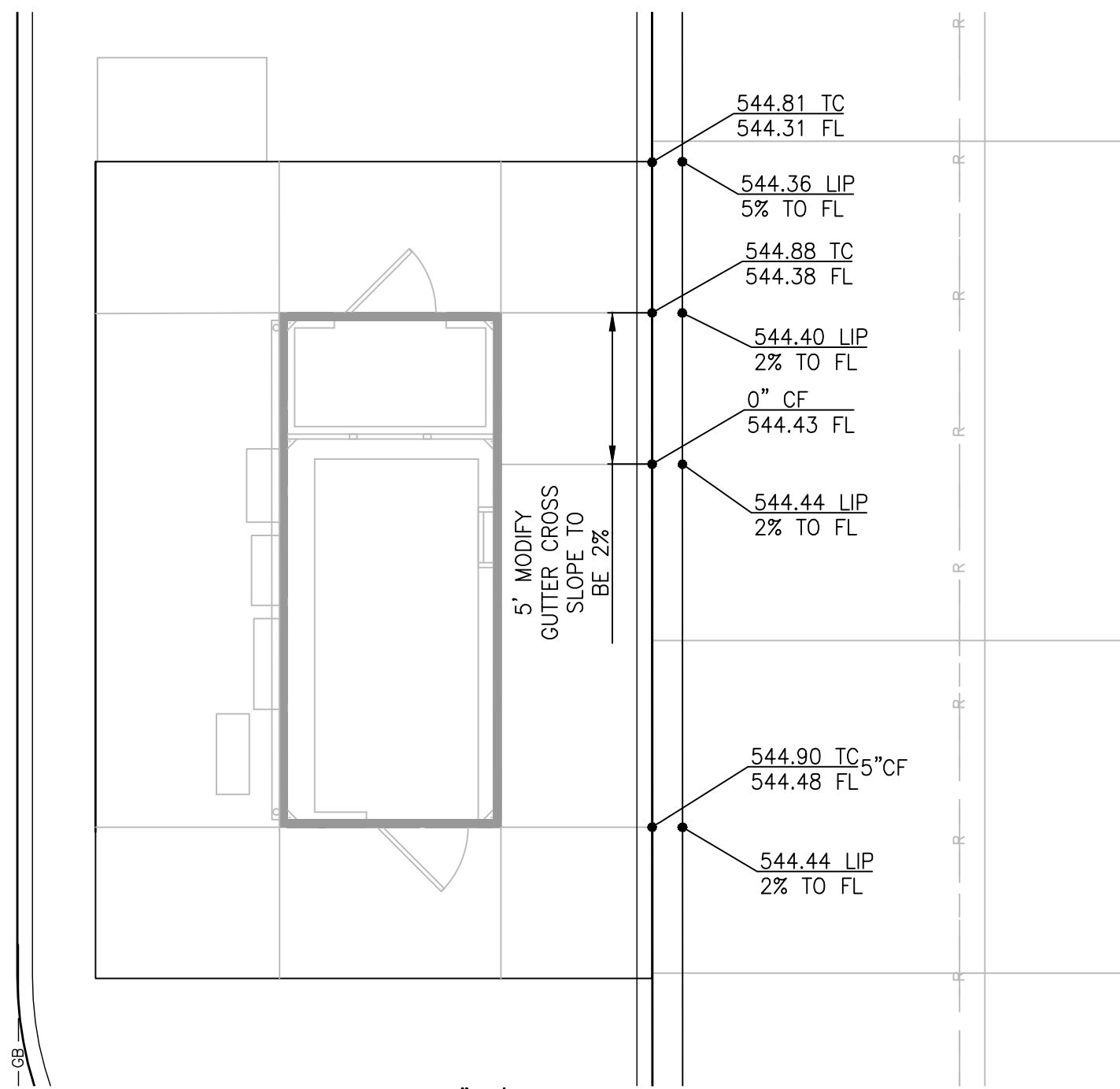
NO.	DESCRIPTION
(1)	CONSTRUCT 3" AC OVER 5" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS (PARKING STALL)
(2)	CONSTRUCT 5" AC OVER 6.5" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS (DRIVE AISLE)
(3)	CONSTRUCT 7" PCC PAVEMENT OVER 4" CLASS II BASE PER GEOTECHNICAL RECOMMENDATIONS
(4)	CONSTRUCT 4" CURB & GUTTER PER MODIFIED COSTCO STD. DETAIL 08-17, SEE DETAIL 4 ON SHEET 9, JOINTS PER SPWPC 112-2
(5)	CONSTRUCT 6" CURB & GUTTER PER COSTCO STD. DETAIL 08-17, SEE DETAIL 4 ON SHEET 9, JOINTS PER SPWPC 112-2
(6)	CONSTRUCT 6" CURB ONLY PER COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPWPC 112-2
(7)	CONSTRUCT 0" CURB PER DETAIL 7 ON SHEET 9, JOINTS PER SPWPC 112-2
(8)	CONSTRUCT 0" TO 6" CURB TRANSITION PER DETAIL 8 ON SHEET 9
(9)	CONSTRUCT 4" TO 6" CURB TRANSITION PER DETAIL 9 ON SHEET 9
(10)	CONSTRUCT 24" WIDE CONCRETE CHANNEL PER DETAIL 10 ON SHEET 9
(11)	CONSTRUCT 3" WIDE RIBBON GUTTER PER DETAIL 11 ON SHEET 9
(12)	CONSTRUCT 8" WIDE RIBBON GUTTER PER DETAIL 12 ON SHEET 9
(13)	CONSTRUCT 12" WIDE CONCRETE STRIP PER COSTCO STD. DETAIL 08-18, SEE DETAIL 13 ON SHEET 9
(14)	CONSTRUCT 6" CONCRETE SIDEWALK; THICKNESS, COLOR, TEXTURE, AND SCORING PER COSTCO STD DETAIL 08-11, SEE DETAIL 14 ON SHEET 9
(15)	CONSTRUCT LOCAL DEPRESSION PER CITY OF SAN MARCOS STD. XXXXXX
(16)	PROPOSED STALL STRIPING, SIGNAGE, AND PAVEMENT MARKINGS PER ARCHITECT'S PLANS
(17)	INSTALL CART CORRAL PER ARCHITECT'S PLANS
(18)	INSTALL BOLLARDS PER ARCHITECT'S PLANS
(19)	INSTALL WIRE BARRIER PER ARCHITECT'S PLANS
(20)	SAWCUT STRAIGHT AND CLEAN
(21)	CONSTRUCT CONTROLLER ENCLOSURE PER ARCHITECT'S PLANS, FOR AN ENLARGED DETAIL OF GRADING AROUND THE ENCLOSURE, SEE DETAIL ON SHEET 8 & 9
(22)	CONSTRUCT 0" TO 5" CURB TRANSITION PER DETAIL 22 ON SHEET 9
(23)	CONSTRUCT 5" TO 4" CURB TRANSITION PER DETAIL 23 ON SHEET 9
(25)	CONSTRUCT 4" CURB ONLY PER COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPWPC 112-2



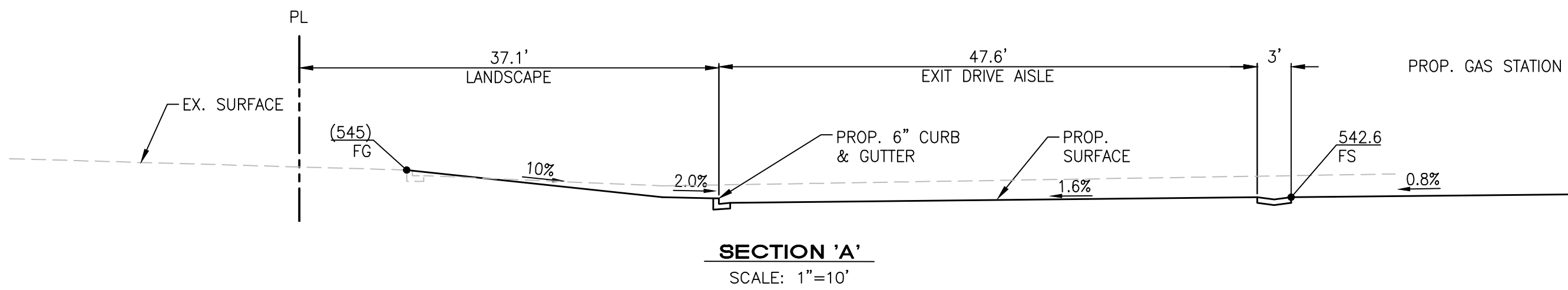
Sheet 7 of 20



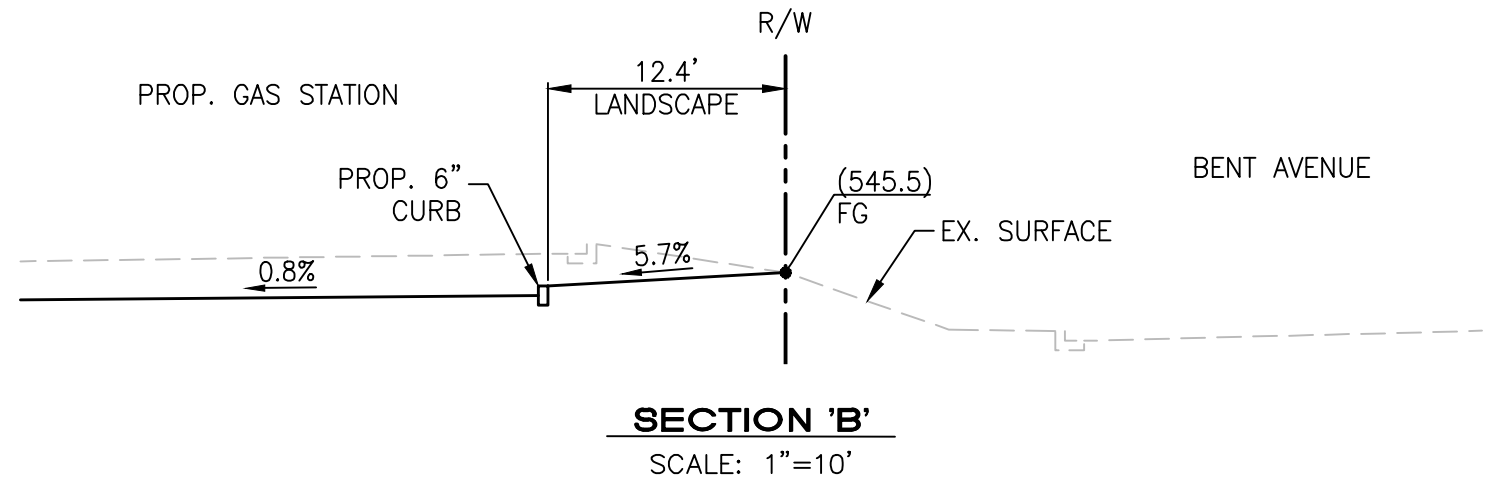
CONTROLLER ENCLOSURE
SCALE: 1"=5'



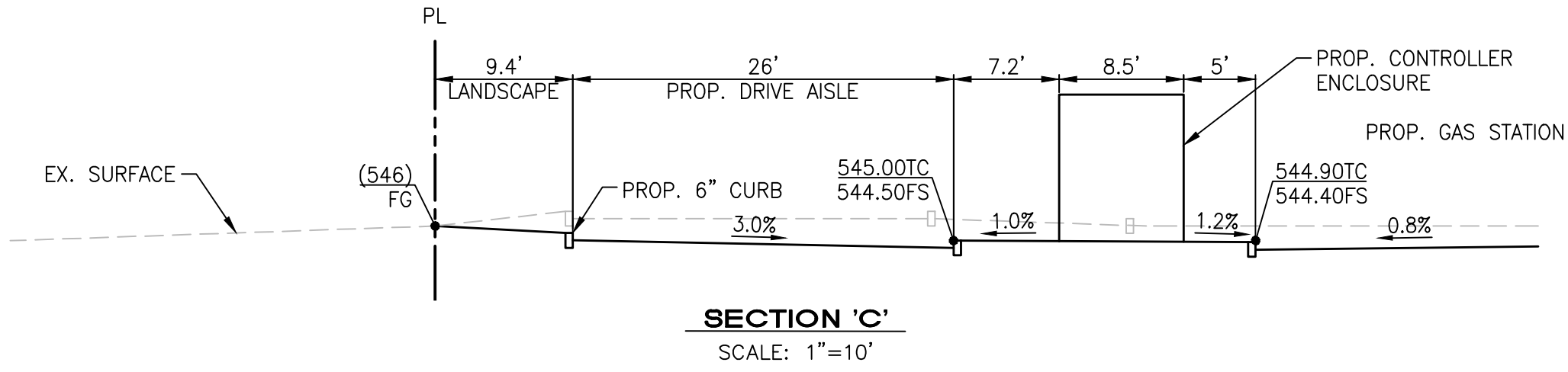
SCALE: 1"=5'
MODIFIED GUTTER CROSS SLOPE
AT CONTROLLER ENCLOSURE



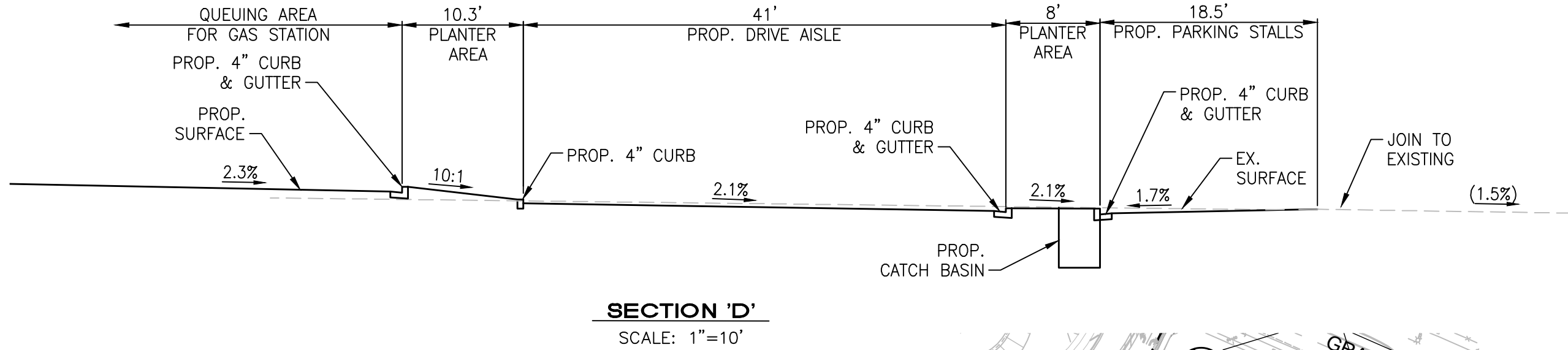
SECTION 'A'
SCALE: 1"=10'



SECTION 'B'
SCALE: 1"=10'

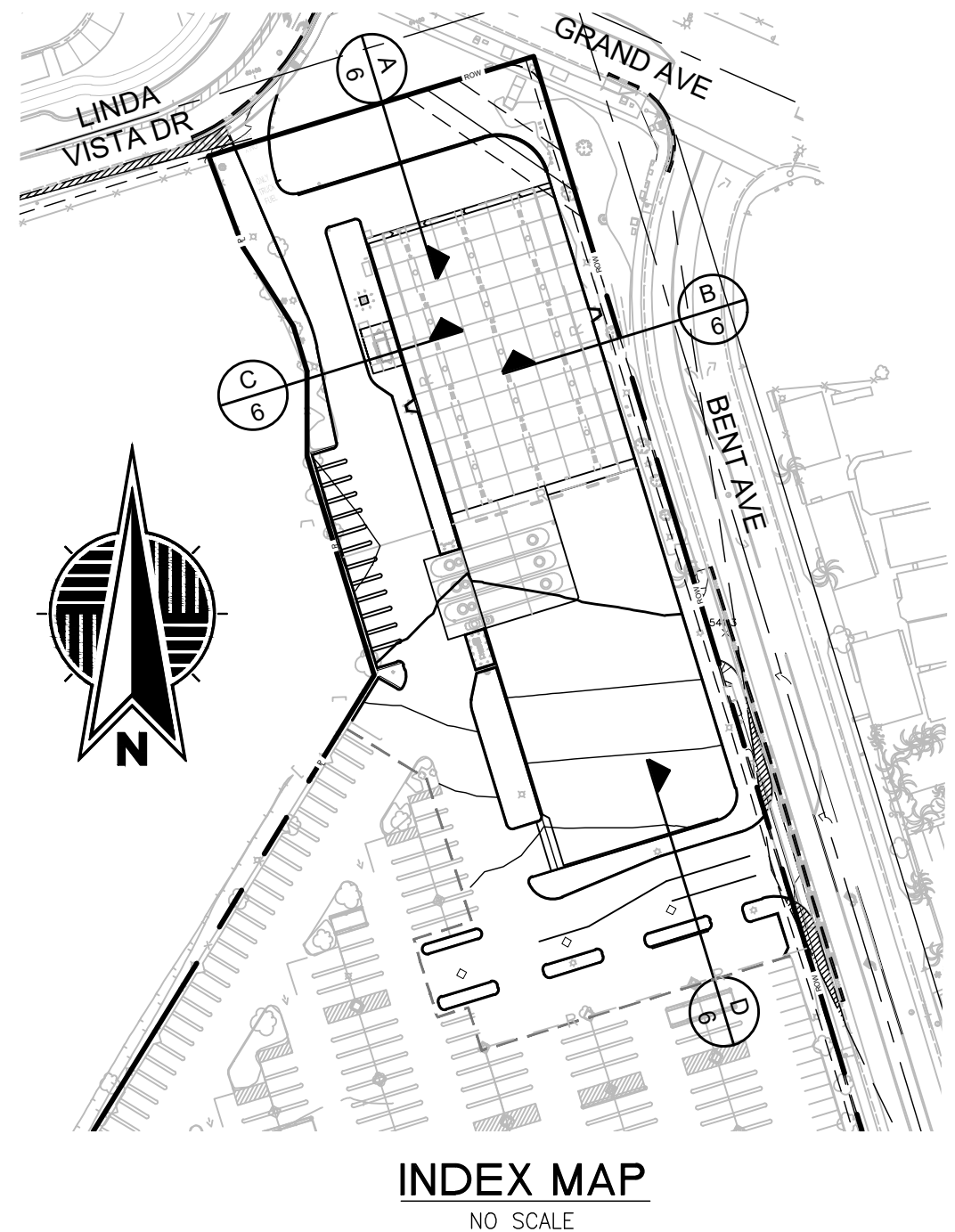


SECTION 'C'
SCALE: 1"=10'



SECTION 'D'
SCALE: 1"=10'

PRECISE GRADING NOTES	
NO.	DESCRIPTION
4	CONSTRUCT 4" CURB & GUTTER PER MODIFIED COSTCO STD. DETAIL 08-17, SEE DETAIL 4 ON SHEET 9, JOINTS PER SPPWC 112-2
5	CONSTRUCT 6" CURB & GUTTER PER COSTCO STD. DETAIL 08-17, SEE DETAIL 4 ON SHEET 9, JOINTS PER SPPWC 112-2
6	CONSTRUCT 6" CURB ONLY PER COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPPWC 112-2
7	CONSTRUCT 0" CURB PER DETAIL 7 ON SHEET 9, JOINTS PER SPPWC 112-2
9	CONSTRUCT 4" TO 6" CURB TRANSITION PER DETAIL 9 ON SHEET 9
14	CONSTRUCT 6" CONCRETE SIDEWALK; THICKNESS, COLOR, TEXTURE, AND SCORING PER COSTCO STD. DETAIL 09-11, SEE DETAIL 14 ON SHEET 9
21	CONSTRUCT CONTROLLER ENCLOSURE PER ARCHITECT'S PLANS, FOR AN ENLARGED DETAIL OF GRADING AROUND THE ENCLOSURE, SEE DETAIL ON SHEET 8
22	CONSTRUCT 0" TO 5" CURB TRANSITION PER DETAIL 22 ON SHEET 9
23	CONSTRUCT 5" TO 4" CURB TRANSITION PER DETAIL 23 ON SHEET 9
24	CONSTRUCT 4" CURB ONLY PER MODIFIED COSTCO STD. DETAIL 08-17, SEE DETAIL 6 ON SHEET 9, JOINTS PER SPPWC 112-2



INDEX MAP
NO SCALE

PREPARED BY:

FUSCOE
ENGINEERING

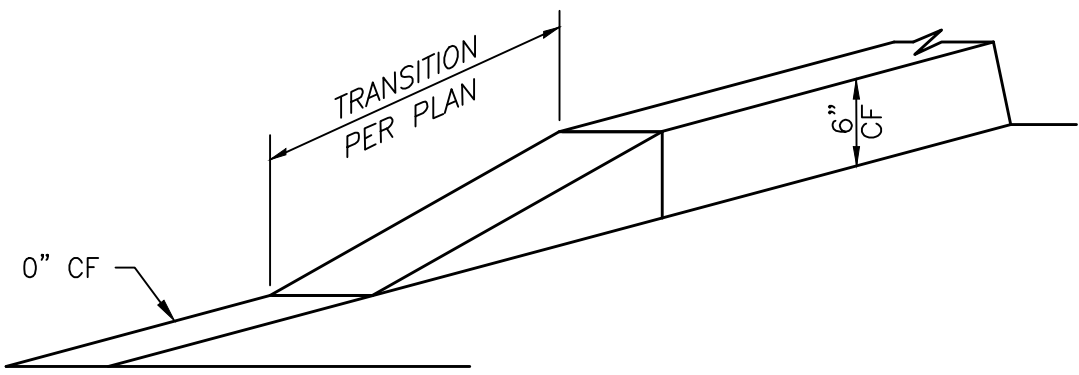
15535 Sand Canyon Ave, Suite 100
Irvine, California 92618
949.474.1960 fuscocom

REGISTERED PROFESSIONAL ENGINEER
MARK K. NERO
NO. 80066
CIVIL
STATE OF CALIFORNIA

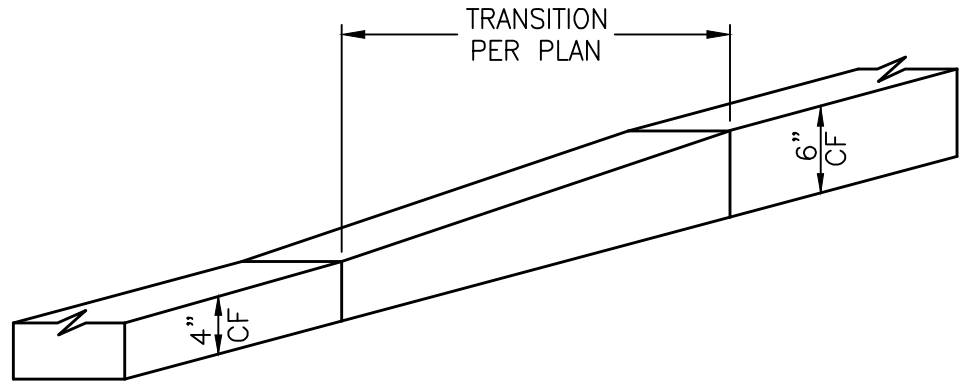
MARK NERO RCE NO.80066 EXP. 09/30/26

ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date: 08/2024 Name: MARK NERO R.C.E.: 80066 exp: 9/30/26	Description: 3" BRASS DISC IN STD. ST. C/L WELL Location: AT INT. LINDA VISTA DR. & GRAND AVE. PT. ED & TIED USING GPS ON ROS 13928 Record From: RECORD OF SURVEY 13928 Elev.: 543.629 Datum: NGVD29

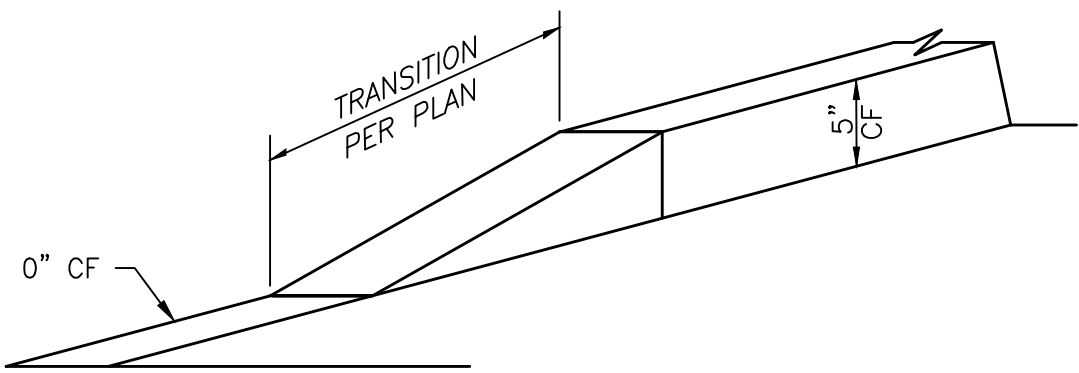
CITY OF SAN MARCOS CONCEPTUAL GRADING PLANS FOR: COSTCO GAS STATION SECTIONS & DETAILS	
ENGINEER OF WORK AS-BUILT CERTIFICATE MARK NERO, PE RCE 80066 EXP. 9/30/2026 DATE	PLANNING PROJECT NO. CUP23-0004 Sheet 8 of 20



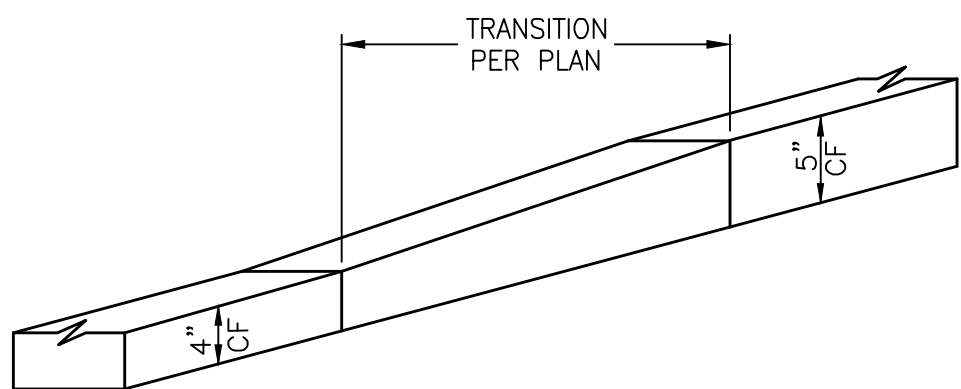
0" TO 6" CURB TRANSITION
NOT TO SCALE



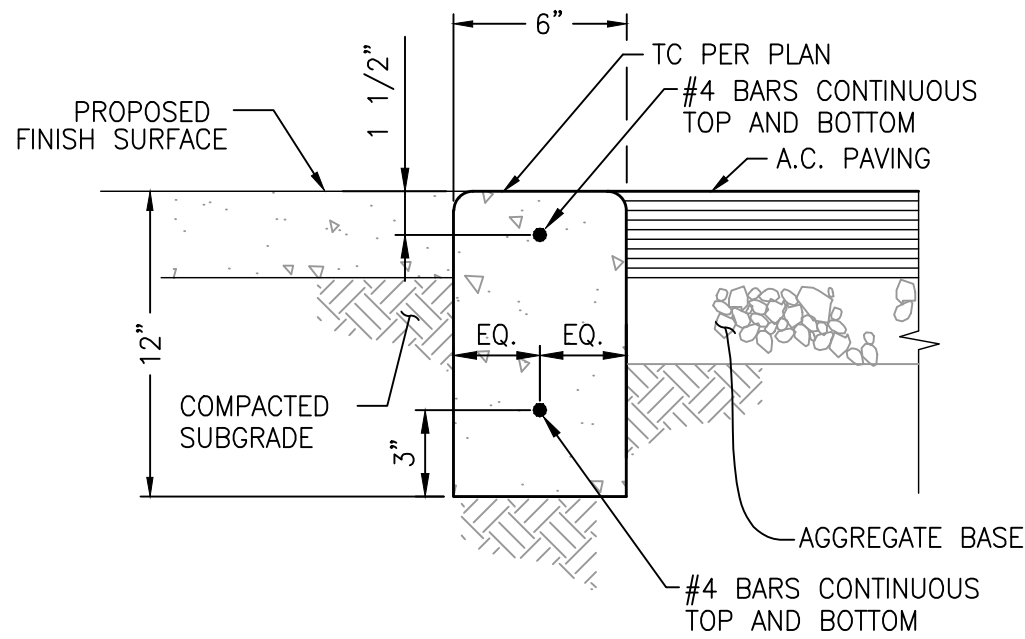
4" TO 6" CURB TRANSITION
NOT TO SCALE



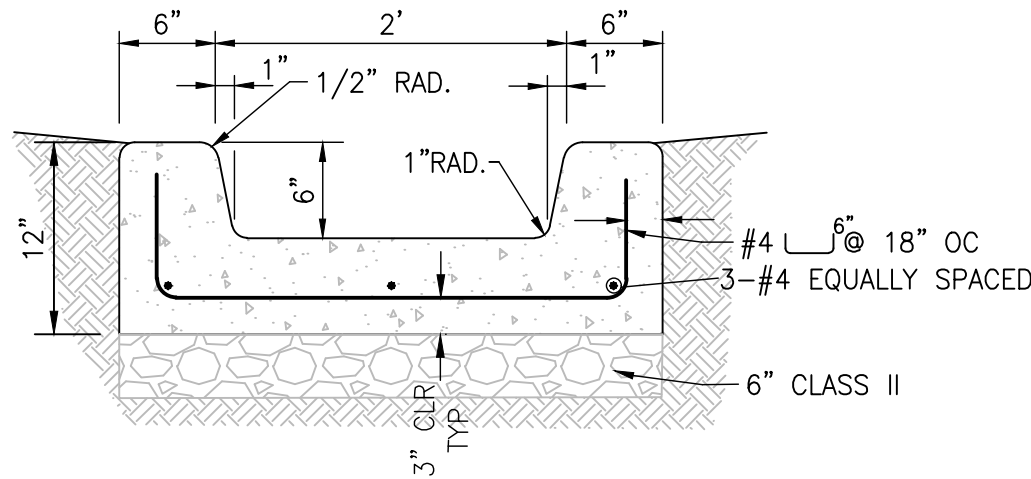
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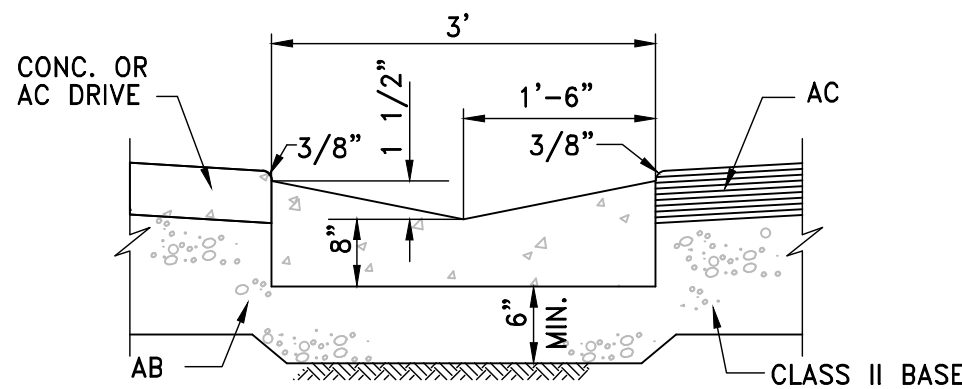
4" TO 5" CURB TRANSITION
NOT TO SCALE



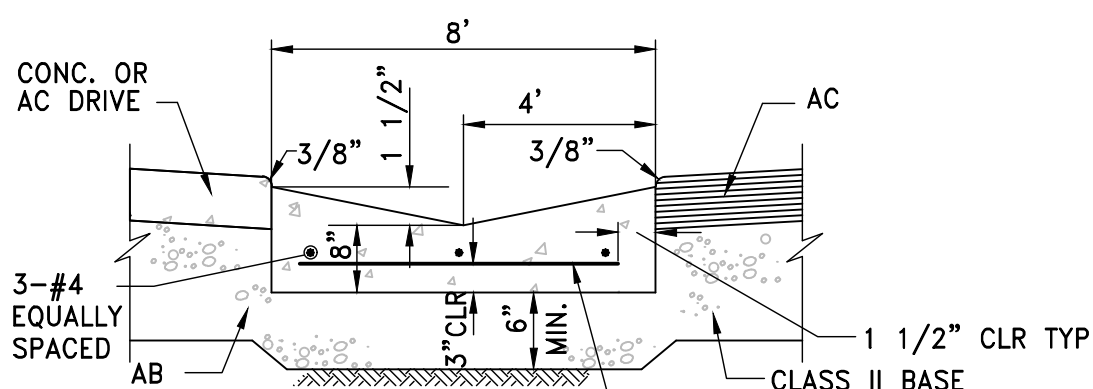
0" CURB FACE
NOT TO SCALE



2' WIDE CURB CHANNEL
NOT TO SCALE

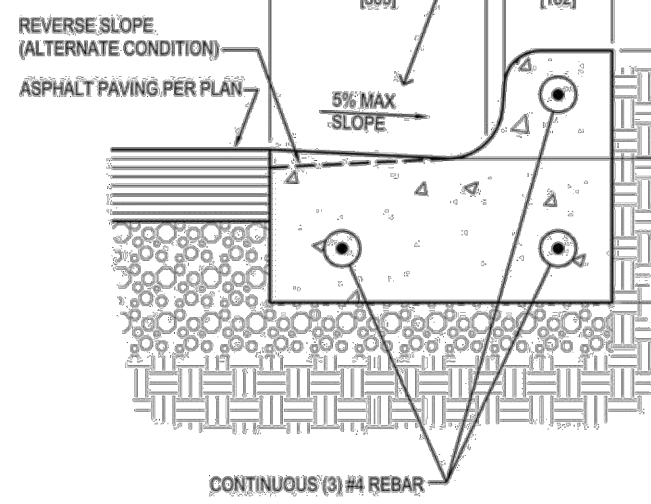


3' WIDE RIBBON GUTTER
NOT TO SCALE



8' WIDE RIBBON GUTTER
NOT TO SCALE

NOTE:
WHERE CURB AND GUTTER CROSSES ACCESSIBLE
WALKWAYS OR CROSSWALKS, THE GUTTER PAN
SLOPE SHALL BE MODIFIED TO 2% MAX



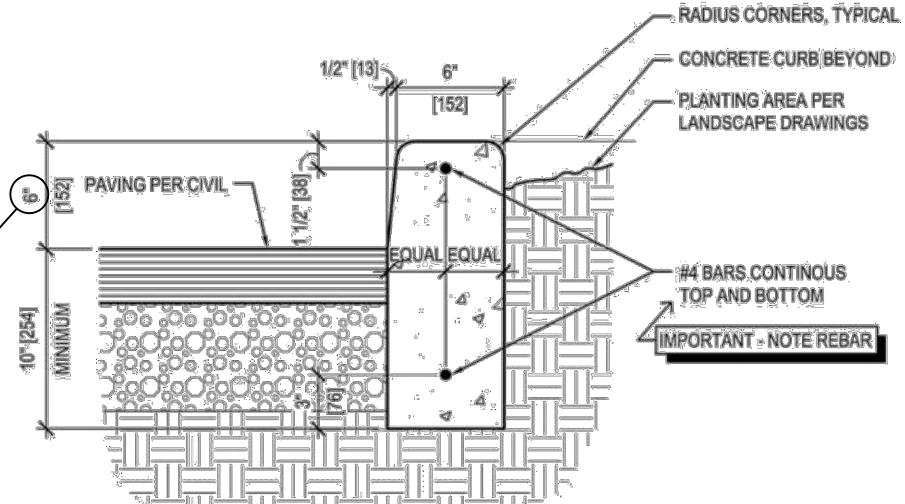
CONCRETE CURB AND GUTTER

COSTCO STD. DETAIL 08_17

NOT TO SCALE

MODIFIED TO 4" CURB AT
CONTROLLER ENCLOSURE
AT GAS STATION

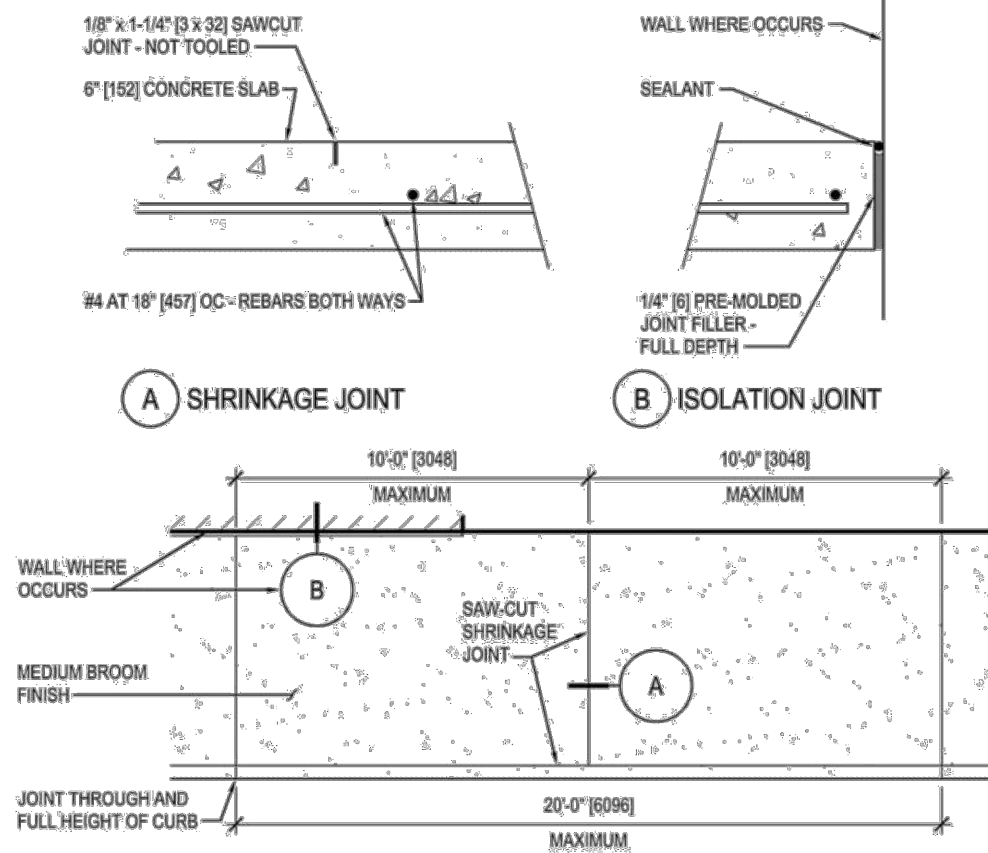
MODIFIED TO 4" CURB AT
CONTROLLER ENCLOSURE
AT GAS STATION



CAST-IN-PLACE CONCRETE CURB

COSTCO STD. DETAIL 09_04

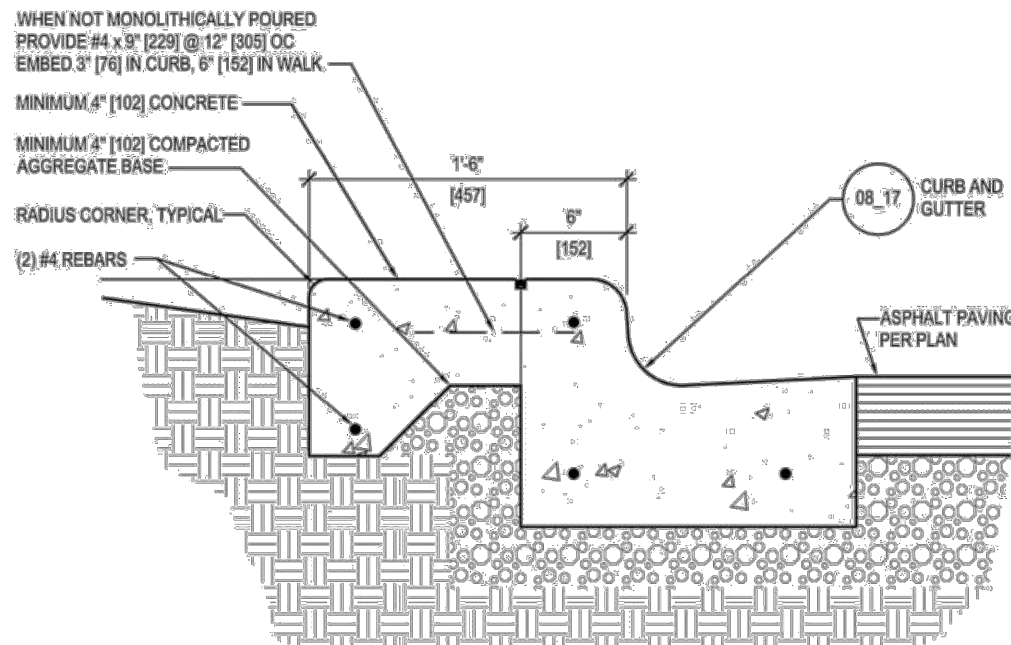
NOT TO SCALE



CONCRETE WALKS

COSTCO STD. DETAIL 09_11

NOT TO SCALE



CURB AND GUTTER AT ISLAND WALK

COSTCO STD. DETAIL 08_18

NOT TO SCALE

PREPARED BY:

FUSCOE
ENGINEERING
15535 Sand Canyon Ave, Suite 100
Irvine, California 92618
949.474.1960 fuscocoe.com



MARK NERO RCE NO.80066 EXP. 09/30/26

ENGINEER OF WORK AS-BUILT CERTIFICATE

MARK NERO, PE RCE 80066 EXP. 9/30/2026

DATE

ENGINEER OF WORK

BENCH MARK

By: FUSCOE ENGINEERING, INC Date: 08/2024
Name: MARK NERO
R.C.E.: 80066 exp: 9/30/26

Description: 3" BRASS DISC IN STD. ST. C/L WELL
Location: AT INT. LINDA VISTA DR. & GRAND AVE. PT. ED
& TIED USING GPS ON ROS 13928
Record From: RECORD OF SURVEY 13928
Elev.: 543.629 Datum: NGVD29

CITY OF SAN MARCOS
CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
DETAILS

PLANNING PROJECT NO.
CUP23-0004

Sheet 9 of 20

PREPARED BY:

FUSCOE

ENGINEERING

15535 Sand Canyon Ave, Suite 100
Irvine, California 92618
949.474.1960

fuscoe.com

REGISTERED PROFESSIONAL ENGINEER
MARK K. NERO
NO. 80066
CIVIL
STATE OF CALIFORNIA

MARK NERO

RCE NO.80066

EXP. 09/30/26

STORM DRAIN NOTES	
NO.	DESCRIPTION
30	INSTALL 4" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60
31	INSTALL 6" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60
32	INSTALL 12" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60
33	INSTALL 4" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS
34	INSTALL 6" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS
35	INSTALL 12" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS
36	INSTALL 6" DRAINAGE CLEANOUT STRUCTURE (DCO), SEE DETAIL 36 ON SHEET 12
37	CONSTRUCT 24"x24" CATCH BASIN WITH TRAFFIC RATED GRATE, JENSEN DRAIN INLET BOX OR APPROVED EQUAL, SEE DETAIL 37 ON SHEET 12
38	CONSTRUCT 36"x36" CATCH BASIN WITH TRAFFIC RATED STEEL PLATE, JENSEN DRAIN INLET BOX OR APPROVED EQUAL, SEE DETAIL 38 ON SHEET 12
39	CONSTRUCT CATCH BASIN PER SAN DIEGO REGIONAL STD. DWG. D-02
40	INSTALL MODULAR WETLAND SYSTEM PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS & DETAILS ON SHEET 13
41	INSTALL OIL/WATER SEPARATOR PER DETAIL 41 ON SHEET 14
42	NOT USED
43	INSTALL PUMP AND SUMP STRUCTURE PER DETAIL 43 ON SHEET 15
44	CONSTRUCT ADS STORMTECH CHAMBER SYSTEM PER DETAIL 44 ON SHEETS 16-18
45	INSTALL DVERT PER DETAIL 47 ON SHEET 19
46	POINT OF CONNECTION TO GAS STATION CANOPY ROOF DRAIN, SEE TYPICAL SECTION 'B' ON SHEET 14
47	INSTALL 8" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60
48	INSTALL 8" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS
49	CONSTRUCT CONCRETE LUG CONNECTION PER SAN DIEGO REGIONAL STD. DWG. D-63

ENGINEER OF WORK

By: FUSCOE ENGINEERING, INC Date:08/2024
Name: MARK NERO
R.C.E.: 80066 exp: 9/30/26

BENCH MARK

Description: 3" BRASS DISC IN STD ST C/L WELL
Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED & TIED USING GPS ON ROS 13928
Record From: RECORD OF SURVEY 13928
Elev.: 543.629 Datum: NGVD29

ENGINEER OF WORK AS-BUILT CERTIFICATE

MARK NERO, PE RCE 80066 EXP. 9/30/2026
DATE

CITY OF SAN MARCOS

CONCEPTUAL GRADING PLANS FOR:

COSTCO GAS STATION

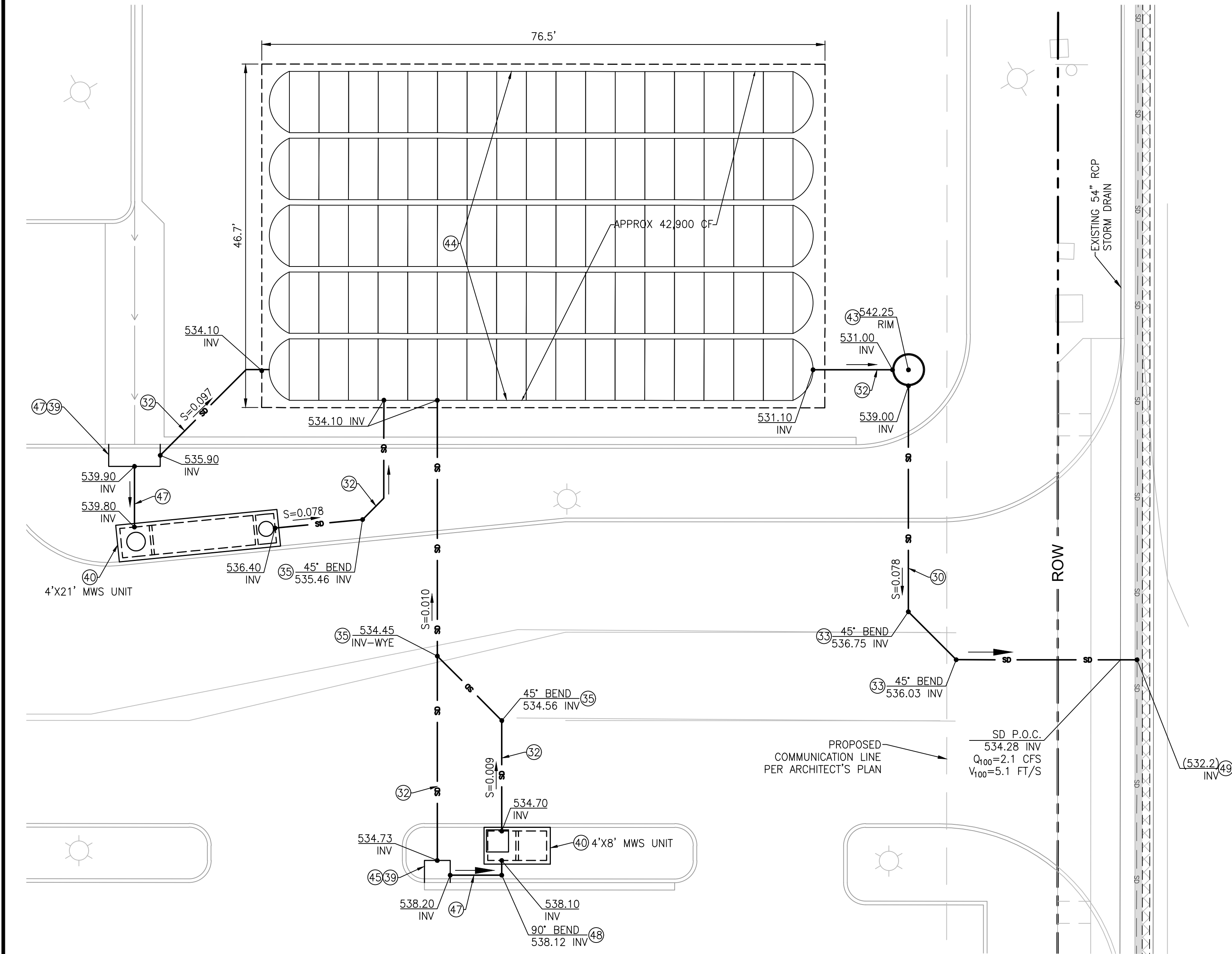
STORM DRAIN PLAN

PLANNING PROJECT NO.

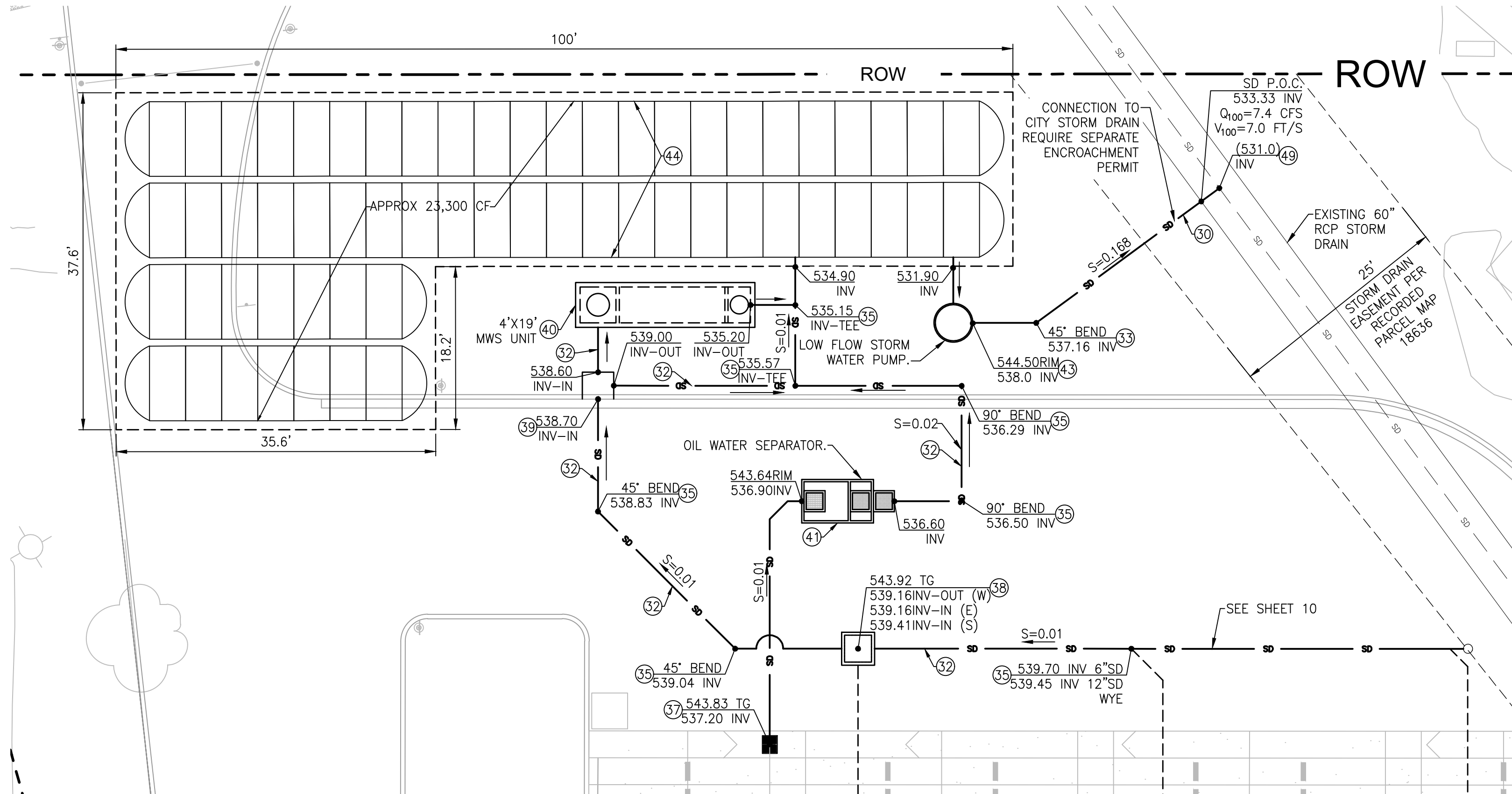
CUP23-0004

Sheet 10 of 20

F:\PROJECTS\756\070\PLANS\GRADING\GAS STATION\756-070PG03SD.DWG (12-23-24 2:40:32PM) Plotted by: jsepedes



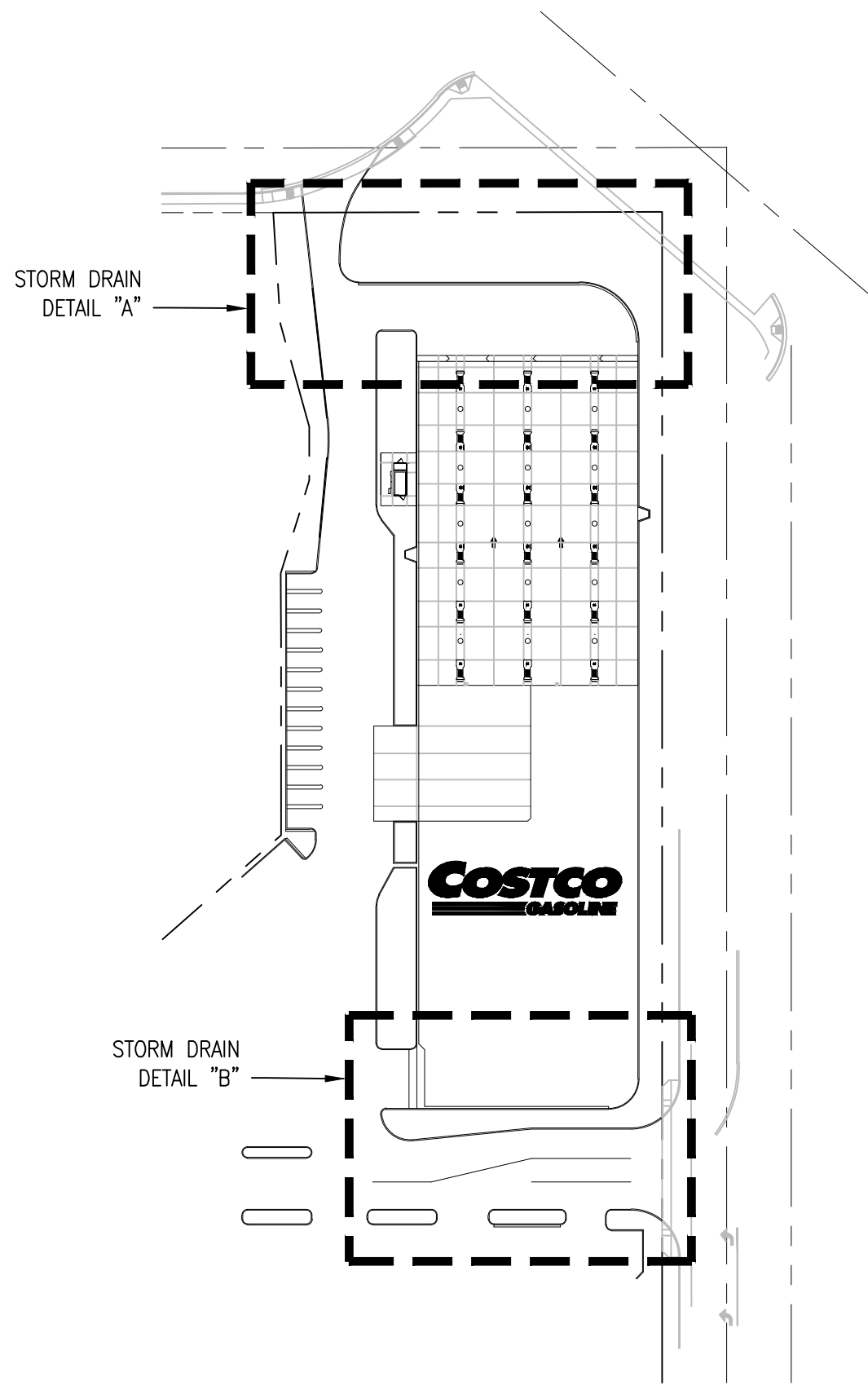
STORM DRAIN DETAIL "B"



STORM DRAIN DETAIL "A"

STORM DRAIN NOTES

NO.	DESCRIPTION
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32	INSTALL 12" PVC (SDR-35) STORM DRAIN LINE, PIPE TRENCH & BEDDING PER SAN DIEGO REGIONAL STD. DWG. D-60
33	INSTALL 4" PVC FITTING (TYPE PER PLAN) PER MANUFACTURER'S STANDARDS AND SPECIFICATIONS
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INDEX MAP
NOT TO SCALE

PREPARED BY:

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REGISTERED PROFESSIONAL ENGINEER
MARK A. NERO
NO. 80066
CIVIL
STATE OF CALIFORNIA

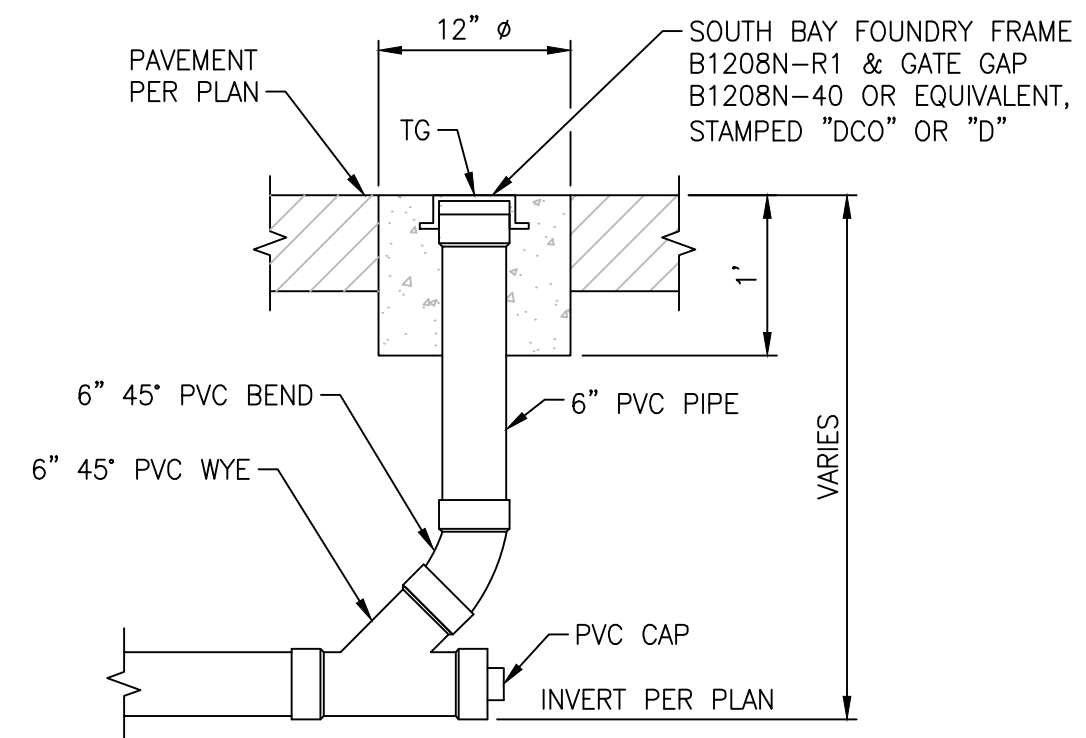
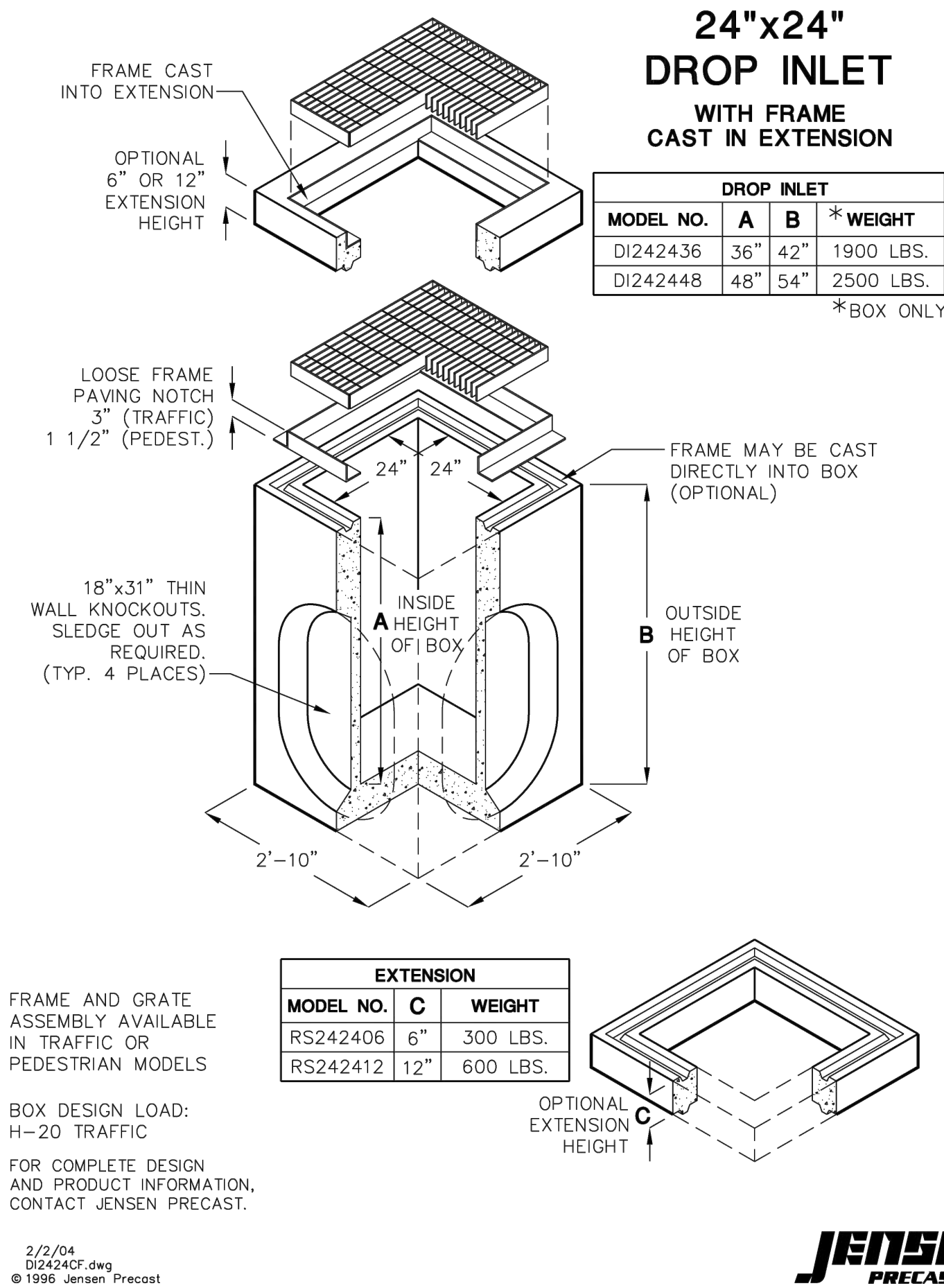
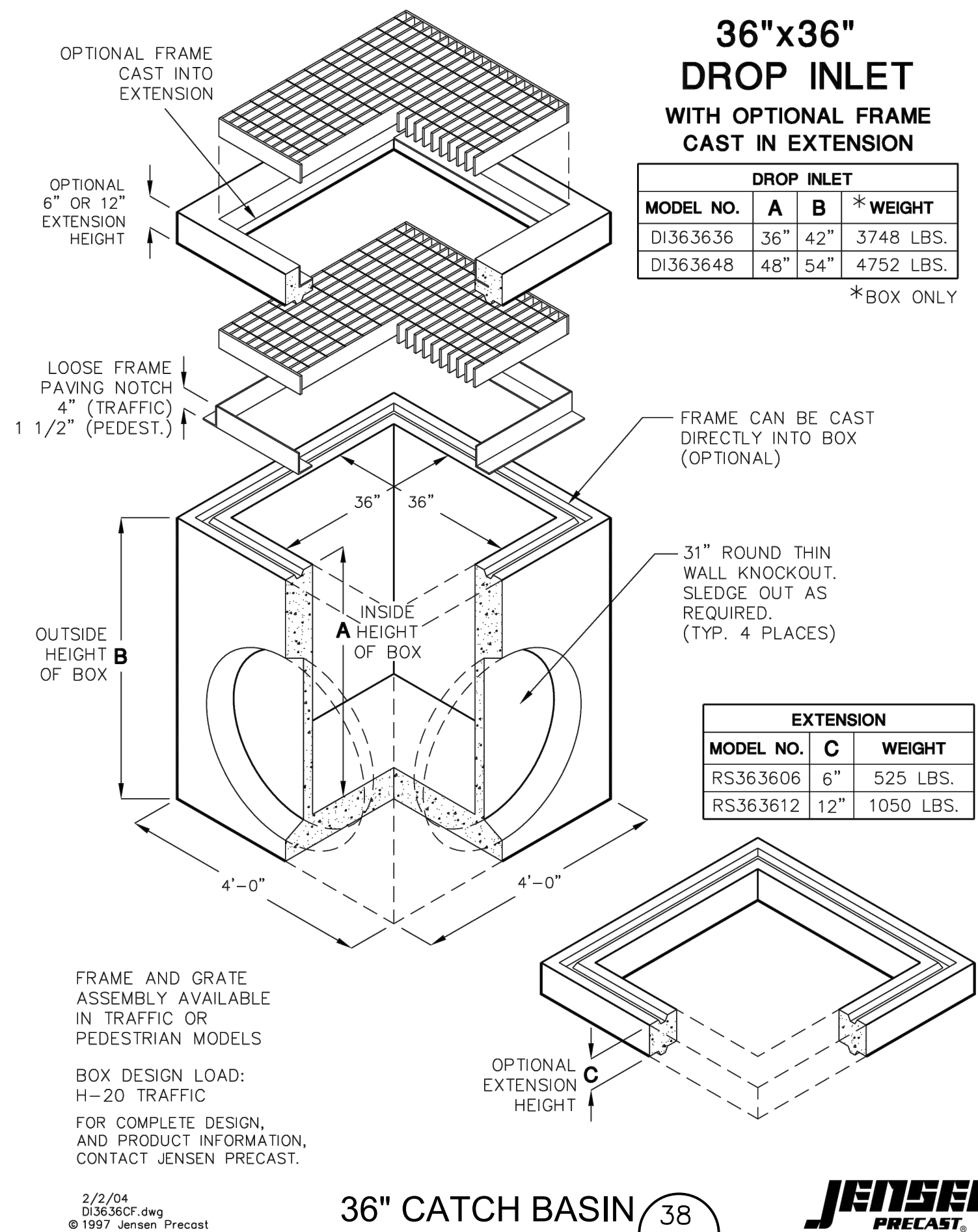
MARK NERO RCE NO.80066 EXP. 09/30/26

ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date: 08/2024 Name: MARK NERO R.C.E.: 80066 exp: 9/30/26	Description: 3" BRASS DISC IN STD. ST. C/L WELL NON-ENCLOSURE STAMPED "CSW RCE 16421" Location: AT INT. LINDA VISTA DR. & GRAND AVE. PT. ED & TIED USING GPS ON ROS 13928 Record From: RECORD OF SURVEY 13928 Elev.: 543.629 Datum: NGVD29

CITY OF SAN MARCOS
CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
STORM DRAIN DETAILS

ENGINEER OF WORK AS-BUILT CERTIFICATE
MARK NERO, PE RCE 80066 EXP. 9/30/2026
DATE

PLANNING PROJECT NO.
CUP23-0004
Sheet 11 of 20



PREPARED BY:

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MARK NERO RCE NO.80066 EXP. 09/30/26

ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date:08/20/2024	Description: 3" BRASS DISC IN STD ST C/L WELL
Name: MARK NERO	Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED & TIED USING GPS ON ROS 13928
R.C.E.: 80066 exp: 9/30/26	Record From: RECORD OF SURVEY 13928
	Elev.: 543.629 Datum: NGVD29

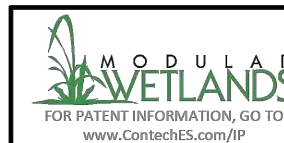
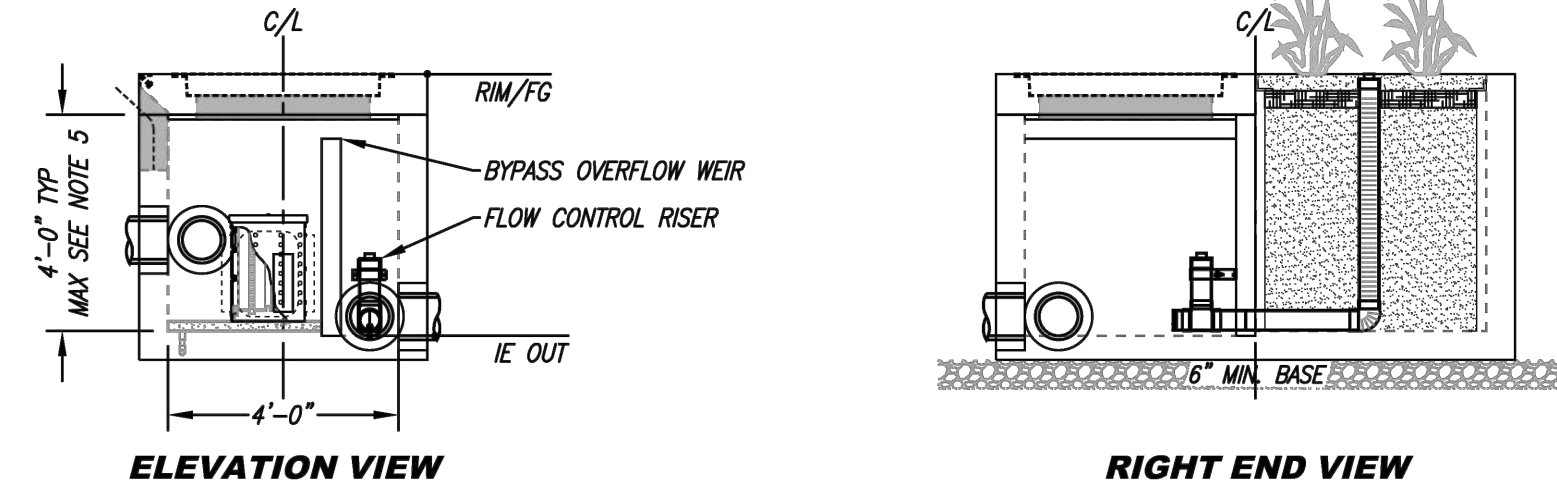
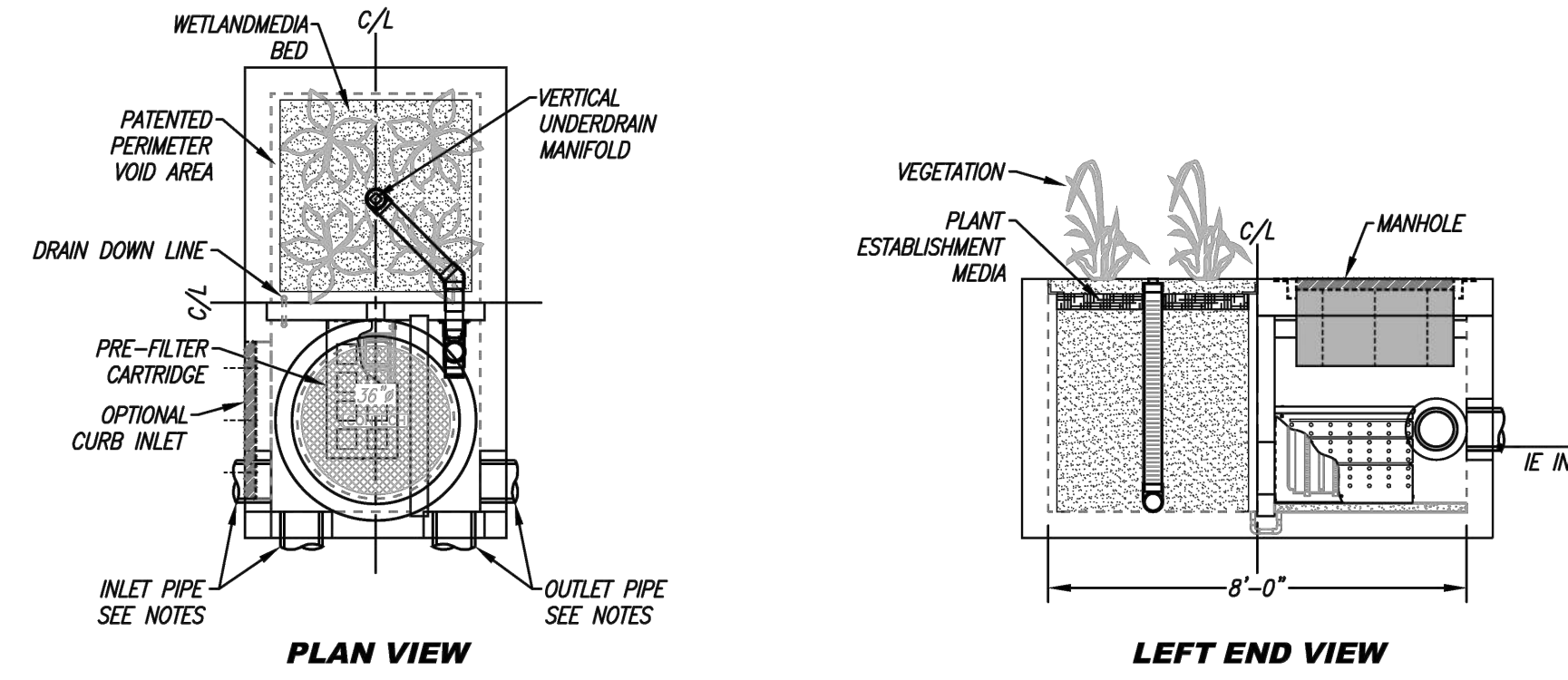
CITY OF SAN MARCOS	PLANNING PROJECT NO.
CONCEPTUAL GRADING PLANS FOR: COSTCO GAS STATION STORM DRAIN DETAILS	CUP23-0004
	Sheet 12 of 20

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			
PRETREATMENT LOADING RATE (GPM/SF)	2.1 GPM/SF		
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0		
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	(CFS)		
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

* PRELIMINARY ONLY - NOT FOR CONSTRUCTION

INSTALLATION NOTES

- CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
- UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
- CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.
- VERTICAL HEIGHT VARIES BASED ON SITE SPECIFIC REQUIREMENTS.



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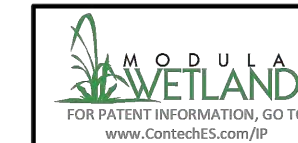
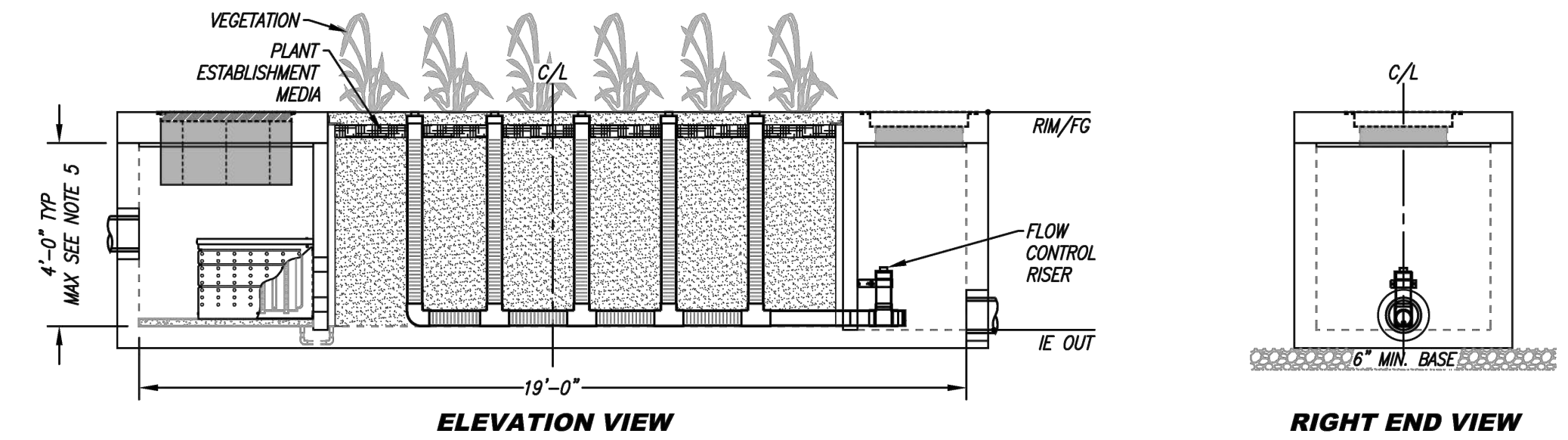
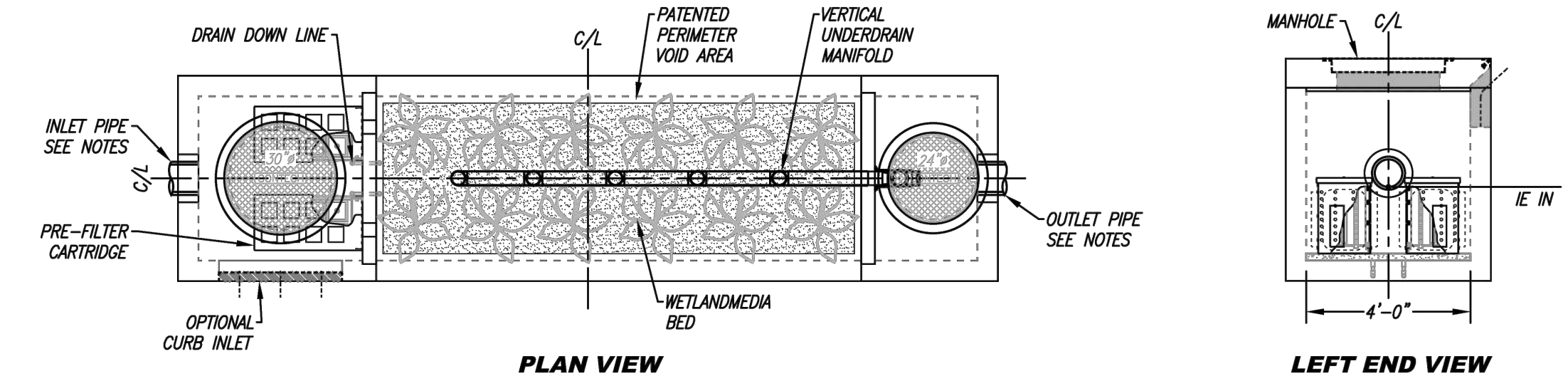
MWS-L-4-8-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			
PRETREATMENT LOADING RATE (GPM/SF)	2.1 GPM/SF		
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0		
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	(CFS)		
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

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MWS-L-4-19-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

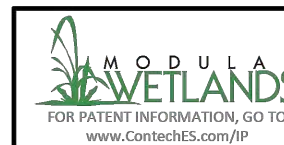
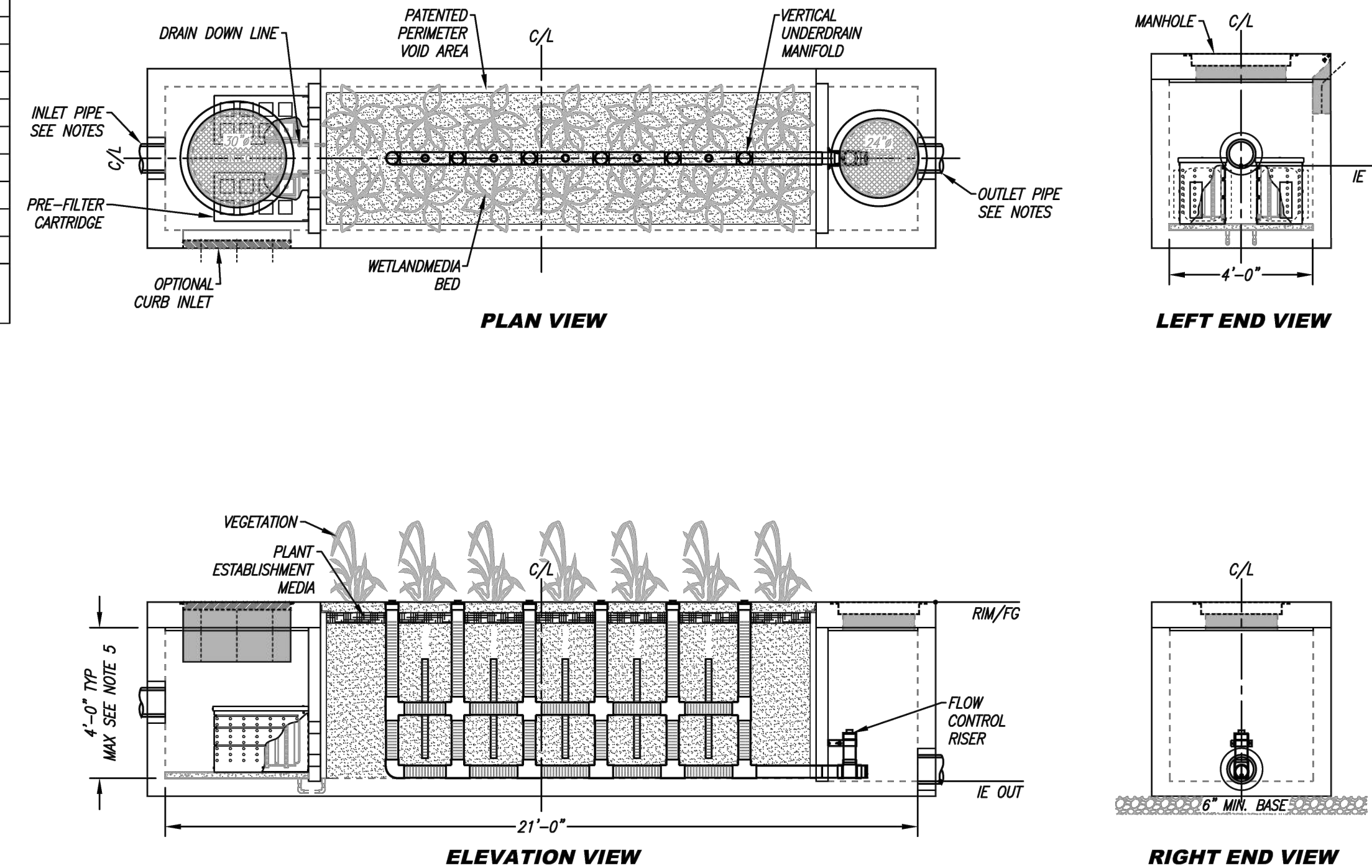
MODULAR WETLAND SYSTEM 40

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			
PRETREATMENT LOADING RATE (GPM/SF)	2.1 GPM/SF		
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0		
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	(CFS)		
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

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INSTALLATION NOTES

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MWS-L-4-21-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

PREPARED BY:



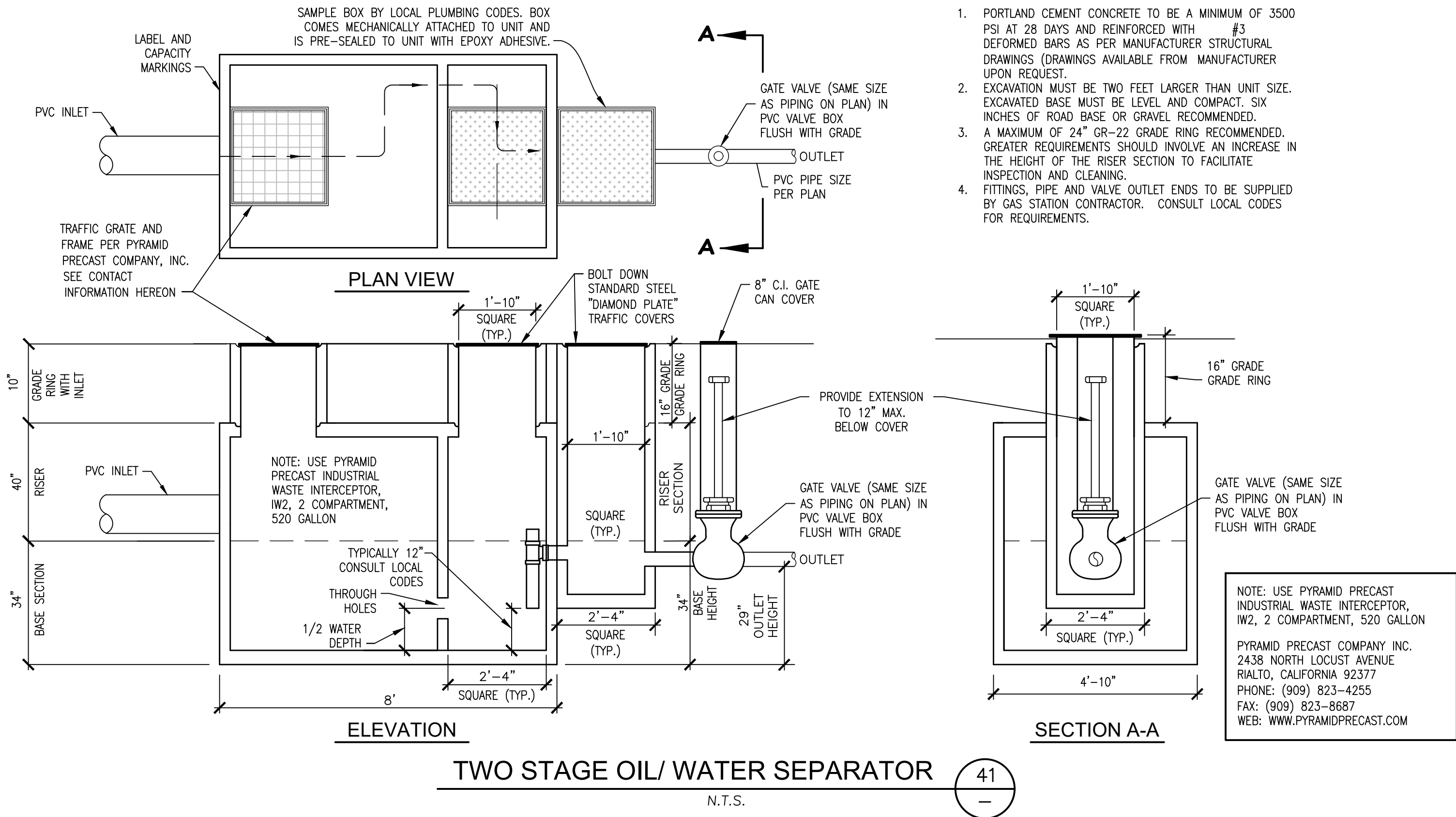
MARK NERO RCB NO.80066 EXP. 09/30/26

ENGINEER OF WORK AS-BUILT CERTIFICATE	
MARK NERO, PE	RCE 80066 EXP. 9/30/2026
DATE	

CITY OF SAN MARCOS
CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
STORM DRAIN DETAILS

PLANNING PROJECT NO.
CUP23-0004

Sheet 13 of 20



SPECIAL CONSTRUCTION PROCEDURES

NOTES: THE INSTALLATION OF THE OIL/WATER SEPARATOR WILL REQUIRE THAT THE EXTERIOR OF ALL STRUCTURES BE CLEANED AND WRAPPED WITH EZ-WRAP PER THE "SPECIAL CONSTRUCTION PROCEDURES" ABOVE. SPECIAL PROCEDURES WILL BE REQUIRED TO PREVENT SPILLS, HANDLING, AND DISPOSAL OF CONTAMINATED WASTES GENERATED BY THE CLEANING OF THESE STRUCTURES. ALL UTILITY(ES) & VAULT(S) TRENCHING & BACKFILL SHALL BE IN ACCORDANCE WITH "SPECIAL CONSTRUCTION PROCEDURES" ABOVE.

LINER SYSTEMS FOR THE STRUCTURES, NEW TANKS, AND UTILITIES SHALL BE CONSISTENT WITH THE REQUIREMENTS OF THESE PLANS, THE AGENCY HAVING JURISDICTION, APPLICABLE ENVIRONMENTAL REPORTS, MANUFACTURER'S INSTALLATION REQUIREMENTS AND PER ORIGINAL LINER SYSTEM PLANS AND DETAILS BY GEO-KINETICS, INC. AS APPLICABLE, WHICHEVER IS THE MOST STRINGENT.

SPECIAL CONSTRUCTION PROCEDURES

ALL EXCAVATIONS, SUCH AS FOR REMOVAL OF THE EXISTING OIL WATER SEPARATOR AND NEW UNDERGROUND UTILITIES WHICH EXTEND MORE THAN 3 FEET BELOW THE FINISHED GRADES OR PAVEMENT SURFACE WILL REQUIRE SPECIAL BACKFILL PROCEDURES. THESE PROCEDURES ARE AS FOLLOWS:

THE PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, ENVIRONMENTAL REPORTS AND THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION, WHICHEVER IS THE MOST STRINGENT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING A QUALITY CONTROL PROGRAM TO ENSURE THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH ALL THE PROJECT REQUIREMENTS. AGENTS OF THE OWNER SHALL CONDUCT VARIOUS OBSERVATIONS AND TESTING AS NECESSARY FOR QUALITY ASSURANCE.

THE DTSC SHALL BE PROVIDED WITH A MINIMUM OF 48 HOURS NOTICE BEFORE THE START OF WORK TO ALLOW DTSC THE OPPORTUNITY TO OBSERVE THE INSTALLATION OF THE EZ WRAP AND CONSTRUCTION OF THE UNDERGROUND UTILITIES.

AT A MINIMUM, THE PIPE BEDDING, HAUNCHES, INITIAL BACKFILL AND FINAL BACKFILL FOR ALL UNDERGROUND UTILITIES, TO A MINIMUM OF ONE (1) FOOT ABOVE THE PIPE OR TO THE HISTORIC HIGH GROUNDWATER ELEVATION (3 FEET BELOW PAVEMENT SURFACE), WHICHEVER IS HIGHER, SHALL CONSIST OF A SAND-CEMENT SLURRY. A MINIMUM OF ONE (1) SACK SAND CEMENT SLURRY IS REQUIRED FOR BACKFILL OF DOMESTIC AND RECLAIMED WATER LINES INSTALLED BELOW THE HIGH GROUNDWATER ELEVATION. A MINIMUM TWO (2) SACK SAND CEMENT SLURRY SHALL BE USED FOR SEWER AND STORM WATER UNDERGROUND UTILITIES. THE TWO (2) SACK SAND-CEMENT SLURRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 220 POUNDS PER SQUARE INCH IN 48 HOURS. THE MINIMUM ONE (1) SACK SAND CEMENT SLURRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 80 PSI AT 48 HOURS. BACKFILL OVER THE SAND CEMENT SLURRY SHALL CONSIST OF IMPORTED OR ONSITE NATIVE SOILS TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER. THE SAND CEMENT SLURRY SHALL BE SAMPLED AND TESTED TO DETERMINE COMPRESSIVE STRENGTH IN ACCORDANCE WITH ASTM STANDARDS A MINIMUM OF ONCE PER DAY OR ONCE EVERY 100 CUBIC YARDS OF PLACEMENT, OR AT ANY CHANGE OF SUPPLIERS, WHICHEVER IS MORE STRINGENT. A MINIMUM OF FIVE SAMPLES SHALL BE PREPARED AND TESTED FOR EACH SAMPLING EVENT FOR COMPRESSIVE STRENGTH DETERMINATION. TWO SAMPLES SHALL BE TESTED AT 48 HOURS AND TWO SAMPLES SHALL BE TESTED AT 7 DAYS FOR COMPRESSIVE STRENGTH, AND ONE SAMPLE SHALL BE RETAINED FOR FURTHER TESTING. ALL SLURRY SHALL BE PLACED WITH INTERNAL VIBRATION WITHOUT DAMAGING THE PIPE, GASKETS, FITTING, ETC. THE BACKFILL AROUND SUBSURFACE STRUCTURES SUCH AS THE OIL-WATER SEPARATOR, MANHOLES, VAULTS, ETC. SHALL CONSIST OF A SAND CEMENT SLURRY AS DESCRIBED ABOVE FOR THE PIPE BACKFILL.

PROPER HANDLING OF POTENTIAL CONTAMINATED SOIL AND OTHER MATERIALS SHALL BE CONDUCTED DURING THE REMOVAL OF THE EXISTING OIL/WATER SEPARATOR AND ASSOCIATED COMPONENTS. THE REMOVED OIL/WATER SEPARATOR AND ASSOCIATED COMPONENTS SHALL BE PLACED ON A LINED/CONTAINMENT LAYER, ALL IMPACTED SOIL AND LINING MATERIALS SHALL BE REMOVED AND PROPERLY DISPOSED OF, FOLLOWED BY DECONTAMINATION OF THE OIL/WATER SEPARATOR PRIOR TO RE-LOCATION.

THE OIL/WATER SEPARATOR AND ASSOCIATED COMPONENTS SHALL BE COMPLETELY ENVELOPED BY STOPAQ PRODUCTS EZ WRAP. THE STOPAQ PRODUCTS EZ WRAP SEAM TAPE AND EZ PASTE PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THIS PRODUCT GENERALLY CONSISTS OF A MULTI-LAYERED WRAP/LINER THAT IS ADHERED TO THE UNDERGROUND UTILITY WITH PASTE. THE SPACE BETWEEN THE EXCAVATION SIDEWALLS AND THE WALLS OF THE OIL/WATER SEPARATOR SHALL BE BACKFILLED WITH A MINIMUM 2-SACK SAND-CEMENT SLURRY. THE INSTALLATION SHALL BE CONDUCTED SUCH THAT ALL JOINTS ARE SEALED TO PREVENT CONTAMINATED GROUNDWATER AND/OR SOIL FROM COMING INTO CONTACT WITH THE GASKETS USED ON THE SEPARATOR.

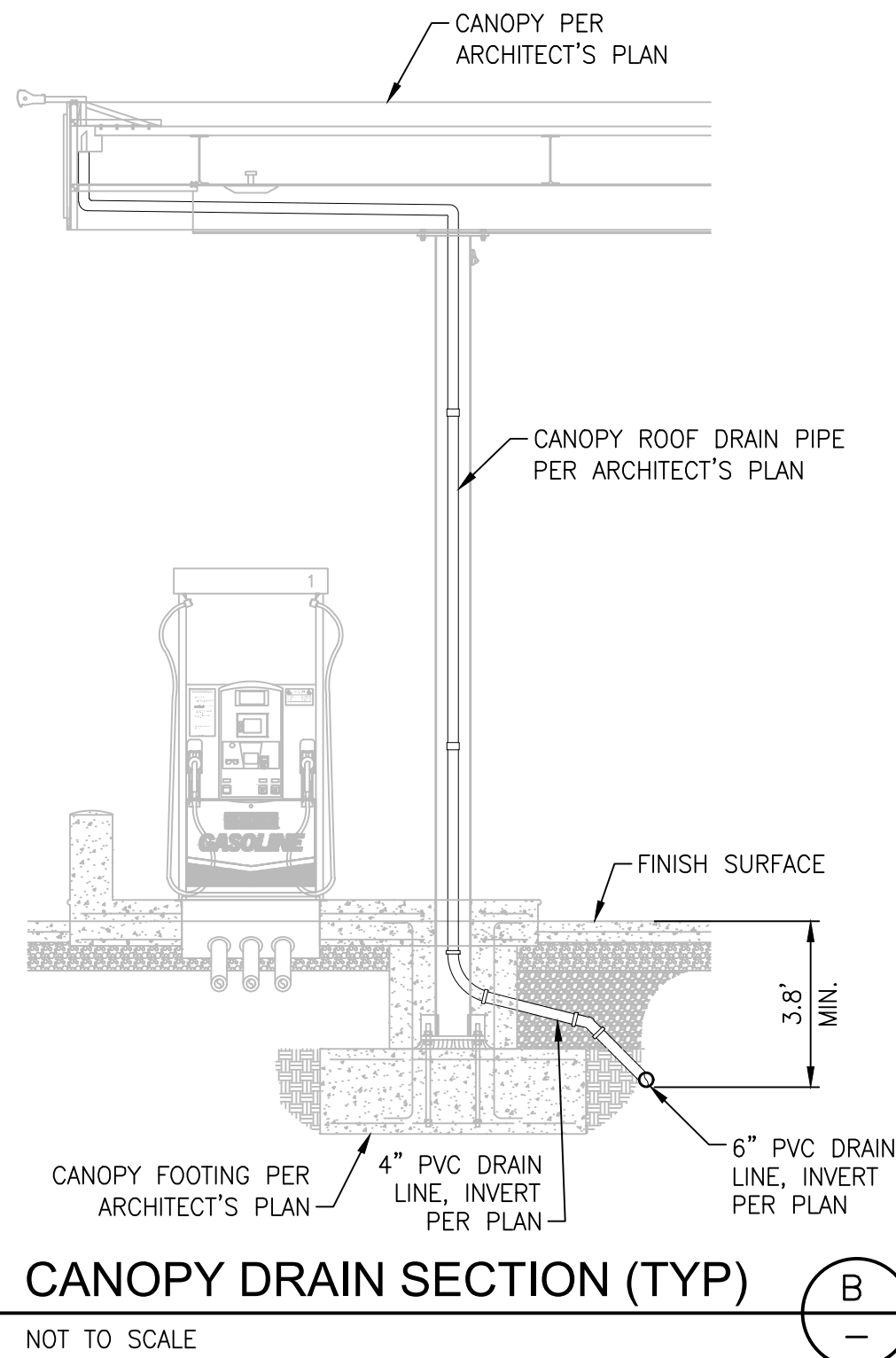
THE CONTRACTOR SHALL VERIFY THAT THE PROPOSED JOINT SEAL AND PASTE ARE COMPATIBLE WITH THE PIPE AND GASKET SYSTEMS USED ON THE PROJECT.

THE CONTRACTOR SHALL OBTAIN TRAINING AND CERTIFICATIONS FROM THE PRODUCT MANUFACTURER FOR ALL EMPLOYEES THAT WILL INSTALL THE PRODUCT. FURTHER, THE CONTRACTOR SHALL ARRANGE FOR THE PRODUCT MANUFACTURER TO CONDUCT PERIODIC SITE VISITS TO ENSURE THAT THE PRODUCTS ARE INSTALLED IN ACCORDANCE WITH THEIR REQUIREMENTS AND GUIDELINES. THE MANUFACTURERS REPRESENTATIVE (MR. EDWIN WELLES, PRESIDENT, STOPAQ AMCORR, INC.) CAN BE REACHED AT 877-586-3710 FOR ANY QUESTIONS RELATED TO THE INSTALLATION REQUIREMENTS FOR THE STOPAQ PRODUCTS.

THE PRODUCT MANUFACTURER SHALL INSPECT THE INSTALLATION OF THE EZ WRAP AND PROVIDE A LETTER STATING THAT, BASED ON THEIR OBSERVATIONS, THAT THE SYSTEM WAS INSTALLED IN ACCORDANCE WITH THEIR INSTALLATION REQUIREMENTS.

THE INSTALLATION OF THE EZ WRAP AND THE PLACEMENT OF THE SLURRY BACKFILL SHALL BE OBSERVED BY AN AGENT OF THE OWNER. A FINAL INSPECTION REPORT SHALL BE PROVIDED TO THE DTSC AND THE CITY OF TUSTIN AT THE COMPLETION OF THE PROJECT DOCUMENTING THAT THE INSTALLATION OF THE SPECIAL CONSTRUCTION REQUIREMENTS (I.E., EZ WRAP, THE UTILITY INSTALLATION, SLURRY BACKFILL, ETC.) HAS BEEN CONDUCTED IN ACCORDANCE WITH THE PROJECT REQUIREMENTS.

THE CONTRACTOR SHALL ADHERE TO THE SPECIAL CONSTRUCTION REQUIREMENTS FOR THE INSTALLATION OF THE UNDERGROUND STORAGE TANK DESCRIBED IN THE DECEMBER 13, 2013 LETTER PREPARED BY MOORE TWINING ASSOCIATES, INC., TITLED: "DETAILS FOR HDPE LINER INSTALLATION OF EXCAVATIONS FOR UNDERGROUND STORAGE TANK AND ASSOCIATED PIPING FOR PRODUCT LINES, VENT LINES AND ELECTRICAL LINES", THE MANUFACTURER'S INSTALLATION REQUIREMENTS, AND THE REQUIREMENTS OF THE PROJECT PLANS, WHICHEVER IS THE MOST STRINGENT.



PREPARED BY:

FUSCOE
ENGINEERING
15535 Sand Canyon Ave, Suite 100
Irvine, California 92618
949.474.1960
fuscoe.com



MARK NERO RCB NO.80066 EXP. 09/30/26

ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date: 08/20/24	Description: 3" BRASS DISC IN STD ST C/L WELL
Name: MARK NERO	Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED
R.C.E.: 80066 exp: 9/30/26	Record From: RECORD OF SURVEY 1992
	Elev.: 543.629 Datum: NGVD29

CITY OF SAN MARCOS
CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
STORM DRAIN DETAILS

PLANNING PROJECT NO.
CUP23-0004
Sheet 14 of 20

STORM WATER PUMP SYSTEM - COSTCO BUSINESS CENTER
SAN MARCOS CA

SCOPE OF SUPPLY:

Furnish and install complete pre-packaged Simplex Lift Station model #PSI-FUS31021 as manufactured by Pacific Southwest Industries (national phone # 800-358-9095)

The pre-packaged Lift Station shall incorporate a quick removal system manufactured by the pump manufacturer. The pump shall be guided to the discharge base elbow by stainless steel guide rails. The rails shall extend from the discharge base elbow to the upper guide bracket mounted on fiberglass channel just below the basin cover. Stainless steel lifting chain or cable shall be supplied and properly installed to remove the pump from the wet well. The internal discharge piping shall be completely pre-plumbed in PVC pipe and extend 12" beyond the wet well side wall for contractor connection to the force main piping. The pump(s) discharge pipe shall have a check and ball valve installed on each discharge line. The Lift Station shall include three liquid level controls on a removable float tree and a control panel suitable for surface mounting. The pump quick removal system and the level sensors shall be housed in a fiberglass wet well (basin) and shall be of sufficient length to maintain the rim of the wet well at grade.

PUMP:

Furnish and install Tsurumi, UZ Series Model 80UZ41.5 submersible pump. The pump shall be capable of delivering 229 GPM at 12.24 Feet TDH. The pump(s) shall be designed to pump waste water, sewage or effluent containing 3.15 inch (80 mm) diameter solids without damage during operation. The pump(s) shall be designed so that the shaft power required (BHP)/(kW) shall not exceed the motor rated output throughout the entire operating range of the pump performance curve. A two year warranty "out of the box" shall be standard.

MATERIALS OF CONSTRUCTION:

Construction of major parts of the pumping unit including casing, impeller and discharge elbow shall be manufactured from gray cast iron, ASTM A48 CLASS 35. Internal and external surfaces coming into contact with the pumpage shall be protected by a fused polymer coating. All exposed fasteners shall be stainless steel. All units shall be furnished with a discharge elbow with 150 lb. (10 Kg./Cm2) flat face flange and NPT companion flange. Impellers shall be of the semi-vortex, solids handling design equipped with back pump out vanes and shall be slip fit to the shaft and key driven.

MECHANICAL SEAL:

All units shall be furnished with a dual inside mechanical shaft seal located completely out of the pumpage, running in a separate oil filled chamber and further protected by an exclusionary oil seal located between the bottom seal faces and the fluid being pumped. The oil chamber shall be fitted with a device that shall provide positive lubrication of the top mechanical seal, (down to one third of the standard oil level). The device shall not consume any additional electrical power. Mechanical seals shall be rated to preclude the incursion of water up to 42.6 PSI. (98.4 Ft.). Units shall have silicon carbide mechanical seal faces. Mechanical seal hardware shall be stainless steel.

MOTOR:

The pump motor shall be 2 Hp, 1.5 kW, 480V, 60 Hz, 3 Phase and shall be NEMA MG-1, Design Type B equivalent. Motor(s) shall be rated at 3.5 full load amps. Motor(s) shall have a 1.15 service factor and shall be rated for 15 starts per hour. Motor(s) shall be air filled, copper wound, class B insulated with built in thermal and over amperage protection for each winding. Motor shaft shall be 403 stainless steel and shall be supported by two permanently lubricated, high temperature ball bearings, with a B-10 life rating at best efficiency point of 60,000 hours. The bearings shall be single row, double shielded, C3, deep groove type ball bearing. Motor housing and bearing housing shall be gray cast iron, ASTM A48 CLASS 30. Motors shall be suitable variable speed applications, utilizing a properly sized variable frequency.

POWER CABLE AND CABLE ENTRANCE:

The pump power cable shall be suitable for submersible pump applications. The cable entrance shall incorporate built in strain relief, a one piece, three way mechanical compression sealing with a fatigue reducing cable boot. The cable entrance assembly shall contain an anti-wicking block to eliminate water incursion into the motor due to Capillary wicking should the power cable be accidentally damaged.

QUICK REMOVAL SYSTEM:

The pumping unit(s) shall be equipped with quick removal system (QRS). The construction shall be such that the pump(s) will automatically connect to the discharge piping when lowered into place on the discharge connector. There shall be no need for personnel to enter the wet well to accomplish installation or removal of the pump(s). The pumping unit(s) shall be fitted with stainless steel lifting chain(s) of sufficient length and strength to permit the raising and lowering of the unit(s). The chain(s) shall be fastened at the top of the structure near the access opening. All parts of the QRS system including base elbow, sliding guide bracket, and guide support shall be manufactured from recyclable, application appropriate resins. The need for a protective coating shall not be required. A sliding guide bracket shall be an integral part of the pumping unit and the pump casing shall have a machined connection with a bracket to connect with the discharge connection. Sealing of the pumping unit to the discharge connection shall be accomplished by a single linear downward motion of the pump with the entire weight of the pumping unit guided by a pawl, thereby wedging the pumping unit tightly against the discharge connector. No portion of the pump shall bear directly on the floor of the pump nor shall a rotary motion of the pump be required for sealing. All fasteners coming into contact with the pumpage shall be stainless steel. Two corrosion resistant guide pipes shall be furnished and installed for each pump to permit raising and lowering of the pump. Guide pipes shall be 1.5 inch (40 mm) in diameter and shall be of adequate length to extend from the lower guide holder to the upper guide bar bracket(s) mounted on the access frame.

CONTROL PANEL:

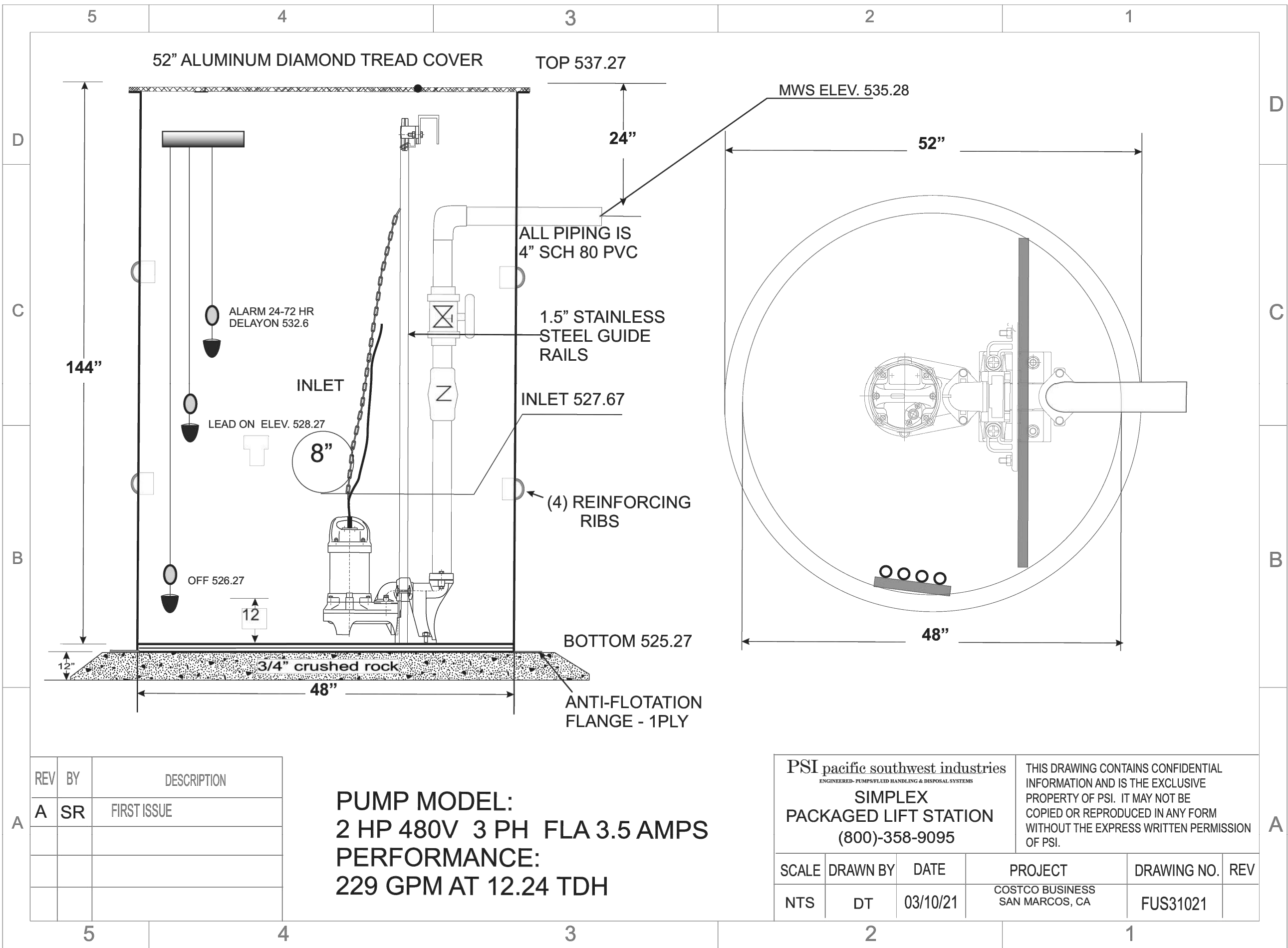
The control panel shall have a NEMA 4X semi dead front enclosure suitable for wall mounting. The outer face of the door shall have only the following: 1 high water alarm light with silence switch, 1 buzzer, and 1 green run lights. The inner workings of the control panel shall have no less than motor circuit protector (overload) that shall be adjustable, motor contactors, HOA selector switches, Smart relay, Elapsed Time Meters, Exercise Timers, circuit breakers, dry contact connection, numbered terminal strip, and shall be listed by U.L. 508.

FIBERGLASS WET WELL:

The fiberglass wet well with an anti-floatation flange shall have a minimum inside diameter of 48 inches and shall be of sufficient length of 144 inches to maintain the rim at grade. The fiberglass wet well shall be manufactured using a process that insures that the bottom of the basin will be fabricated at the same time as the sidewalls, eliminating the possibility of any joints or seams in the wet well in the area of greatest stress concentration. The wet well will be constructed with 1 ply- 3/4" marine plywood encapsulated into the bottom and (4) re-inforcing ribs for added structural support of the tank. The laminate shall have a barcol hardness of at least 90% of the resin manufactures minimum specified hardness for cured resin on both the interior and exterior surfaces. The minimum wall thickness of the wet well shall not be less than 3/16". A steel plate will be encapsulated in the bottom of the wet well to allow the mounting of the polypropylene bottom and the quick removal system. The wet well shall be provided with "uniseal" fittings that can be installed in the field to insure proper elevation of the inlet, vent, and electrical on the side of the wet well.

ALUMINUM DIAMOND TREAD FOOT TRAFFIC COVERS W/HATCH:

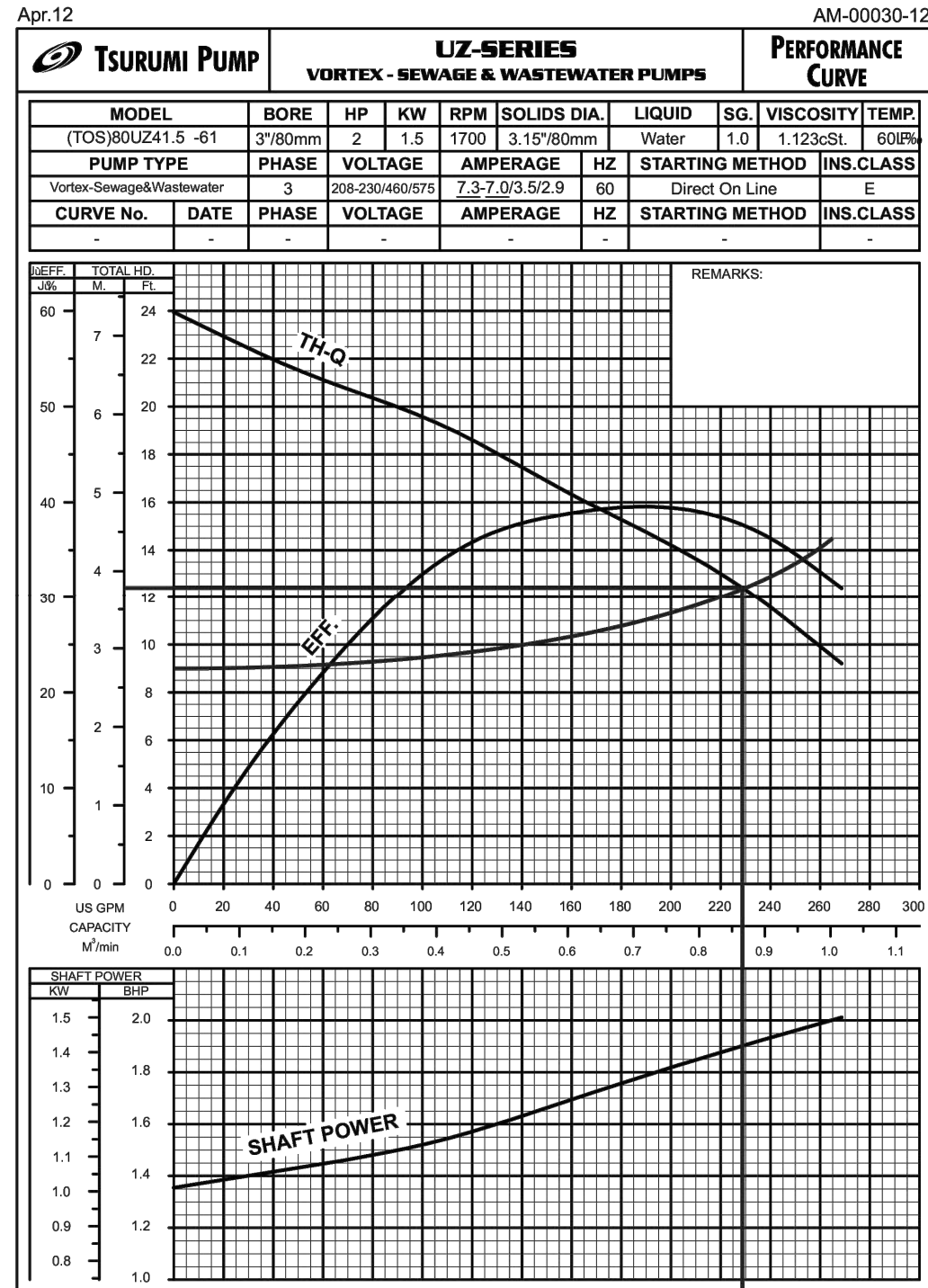
The wet well will be covered with a solid 1/4" thick aluminum diamond tread cover suitable for load up to 300 psf. The cover will be solid with no penetrations through it. The cover will be gasketed and bolted to the rim flange of the fiberglass tank using 7/16" stainless steel hex head bolts. No covers using epoxy paint will be acceptable.



REV	BY	DESCRIPTION
A	SR	FIRST ISSUE

PUMP MODEL:
2 HP 480V 3 PH FLA 3.5 AMPS
PERFORMANCE:
229 GPM AT 12.24 TDH

PSI pacific southwest industries ENGINEERED, PUMP/FLUID HANDLING & DISPOSAL SYSTEMS		THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS THE EXCLUSIVE PROPERTY OF PSI. IT MAY NOT BE COPIED OR REPRODUCED IN ANY FORM WITHOUT THE EXPRESS WRITTEN PERMISSION OF PSI.	
SIMPLEX PACKAGED LIFT STATION (800)-358-9095			
SCALE	DRAWN BY	DATE	PROJECT
NTS	DT	03/10/21	SAN MARCOS, CA
		DRAWING NO.	REV
		FUS31021	



STORM LIFT STATION PROFILE & CALCULATIONS
EQUIVALENT PIPE RUN CALCULATION

4" SCH 80 PVC PIPE	30.0 FT
4" PVC SCH 80 90 ELBOW	(3) X 10 FT 30.0 FT
4" PVC SCH 80 45 BEND	(0) X 5 FT 0.0 FT
4" PVC SCH 80 TEE	(0) X 22 FT 0.0 FT
4" CHECK VALVE	(1) X 26 FT 26.0 FT
4" BALL VALVE	(1) X 2.3 FT 2.3 FT
TOTAL EQUIVALENT LENGTH	88.3 FT

FRICITION LOSS PER 100 FT 4" PVC @ 230 GPM 3.65 100/FT
FRICITION LOSS 88.3/100 X 3.65 FT = 3.23 FT
STATIC HEAD 9.01 FT
TOTAL DEVELOPED HEAD 12.24 FT
PERFORMANCE 229 GPM @ 12.24 TDH THRU 4" PVC LINE

Hazen-Williams Equation
Head Loss in Water Pipe

$$f = 0.2083 (100 / c)^{1.852} q^{1.852} / d_h^{4.8665}$$

c = 140 HDPE/PVC

q = 230 GPM

dh = 3.87 for 4" SCH 80

FRICITION LOSS PER 100 FT

3.652 FT

PUMP & SUMP STRUCTURE

43

PREPARED BY:



MARK NERO RCE NO.80066 EXP. 09/30/26

ENGINEER OF WORK AS-BUILT CERTIFICATE		
MARK NERO, PE	RCE 80066	EXP. 9/30/2026
DATE		

ENGINEER OF WORK	BENCH MARK
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CITY OF SAN MARCOS		PLANNING PROJECT NO.
CONCEPTUAL GRADING PLANS FOR:		CUP23-0004
COSTCO GAS STATION		
STORM DRAIN DETAILS		Sheet 15 of 20

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	TRAVIS ANTONISSEN 949-237-8866 TRAVIS.ANTONISSEN@ADS-PIPE.COM
ADS SALES REP:	ALLAN WARBRICK 760-330-0746 ALLAN.WARBRICK@ADS-PIPE.COM
PROJECT NO:	S219256



ADVANCED DRAINAGE SYSTEMS, INC.



COSTCO BUSINESS CENTER

SAN MARCOS, CA

MC-4500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-4500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN/IN, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.85 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 9 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

- STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOTTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- FULL 96" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

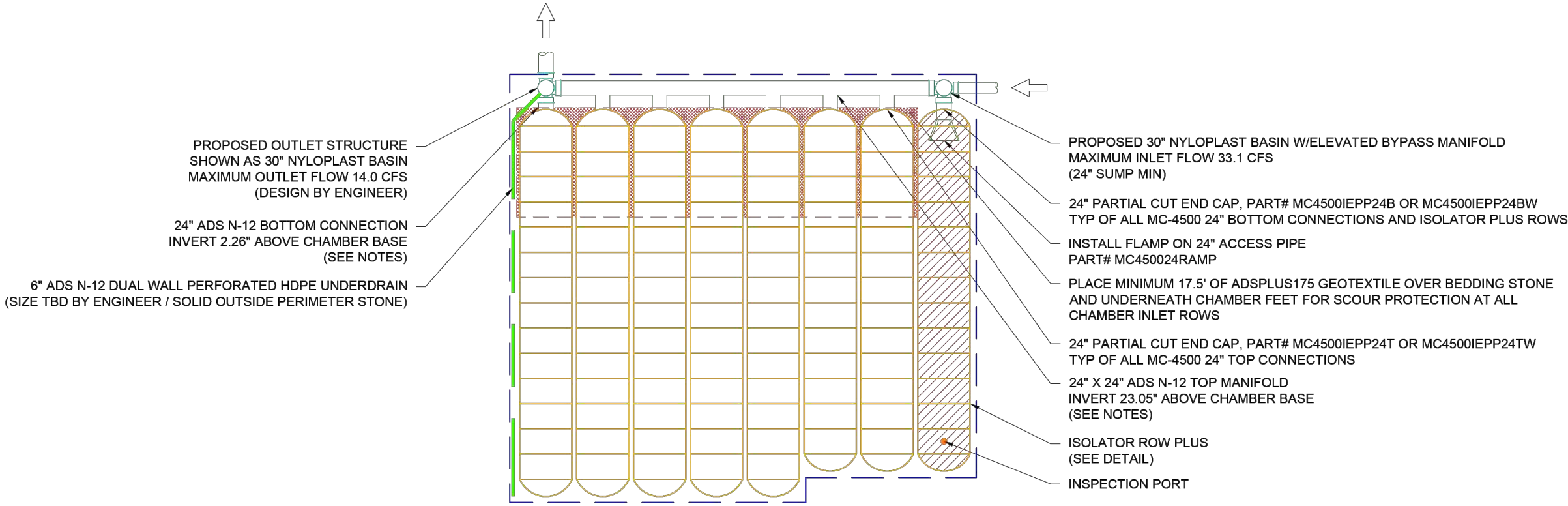
USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

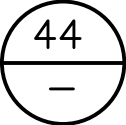
PROPOSED LAYOUT	
109	STORMTECH MC-4500 CHAMBERS
16	STORMTECH MC-4500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	% STONE VOID
20008	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
4986	SYSTEM AREA (ft²)
286	SYSTEM PERIMETER (ft)
PROPOSED ELEVATIONS	
540.73	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
536.23	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
535.73	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
535.73	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
535.73	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
534.73	TOP OF STONE
533.73	TOP OF MC-4500 CHAMBER
530.65	24" TOP MANIFOLD INVERT
528.92	24" ISOLATOR ROW PLUS CONNECTION INVERT
528.92	24" BOTTOM CONNECTION INVERT
528.73	BOTTOM OF MC-4500 CHAMBER
527.98	UNDERDRAIN INVERT
527.98	BOTTOM OF STONE

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.



ADS STORMTECH CHAMBER SYSTEM



PREPARED BY:



MARK NERO RCB NO.80066 EXP. 09/30/26

ENGINEER OF WORK AS-BUILT CERTIFICATE		
MARK NERO, PE	RCE 80066	EXP. 9/30/2026
DATE		

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CITY OF SAN MARCOS
CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
STORM DRAIN DETAILS

PLANNING PROJECT NO. CUP23-0004
Sheet 16 of 20

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2.1, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 85% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PERIMETER STONE (SEE NOTE 4)

EXCAVATION WALL (CAN BE SLOPED OR VERTICAL)

12" (300 mm) MIN

MC-4500

SUBGRADE SOILS

9" (230 mm) MIN

100" (2540 mm)

12" (300 mm) MIN

24" (600 mm) MIN

7'0" (2.1 m) MAX

TO BOTTOM OF FLEXIBLE PAVEMENT FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 30" (760 mm)

PAVEMENT LAYER (DESIGNED BY SITE DESIGN ENGINEER)

60" (1524 mm)

DEPTH OF STONE TO BE DETERMINED BY SITE DESIGN ENGINEER 9" (230 mm) MIN

ADS GEOSYNTHETICS 801T NON-WOVEN GEOTEXTILE ALL AROUND CLEAN, CRUSHED, ANGULAR STONE IN A & B LAYERS

THIS CROSS SECTION DETAIL IS A MINIMUM REQUIREMENT FOR RICH. PLEASE SEE THE LAYOUT SHEET FOR PROJECT SPECIFIC REQUIREMENTS

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x10.

2. MC-400 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".

3. THE SITES RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.

4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

5. REQUIREMENTS FOR HANDLING AND INSTALLATION:

a) TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.

b) TO ENSURE A SEAL JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".

c) TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN².IN.

d) b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

 StormTech Stormwater Management Systems, Inc.	4640 TRUHEMAN BLVD HILLIARD, OH 43026		StormTech Stormwater Management Systems, Inc. 400 COLUMBUS AVE SUITE 200 COLUMBUS, OH 43215-1000		DATE: 01/26/21 DRAWN: TSG		
	4 SHEET OF 7		PROJECT # 521236 CHECKED: HMB		DATE: 01/26/21 DRAWN: TSG		
4640 TRUHEMAN BLVD HILLIARD, OH 43026			400 COLUMBUS AVE SUITE 200 COLUMBUS, OH 43215-1000			DATE: 01/26/21 DRAWN: TSG	
4640 TRUHEMAN BLVD HILLIARD, OH 43026			400 COLUMBUS AVE SUITE 200 COLUMBUS, OH 43215-1000			DATE: 01/26/21 DRAWN: TSG	

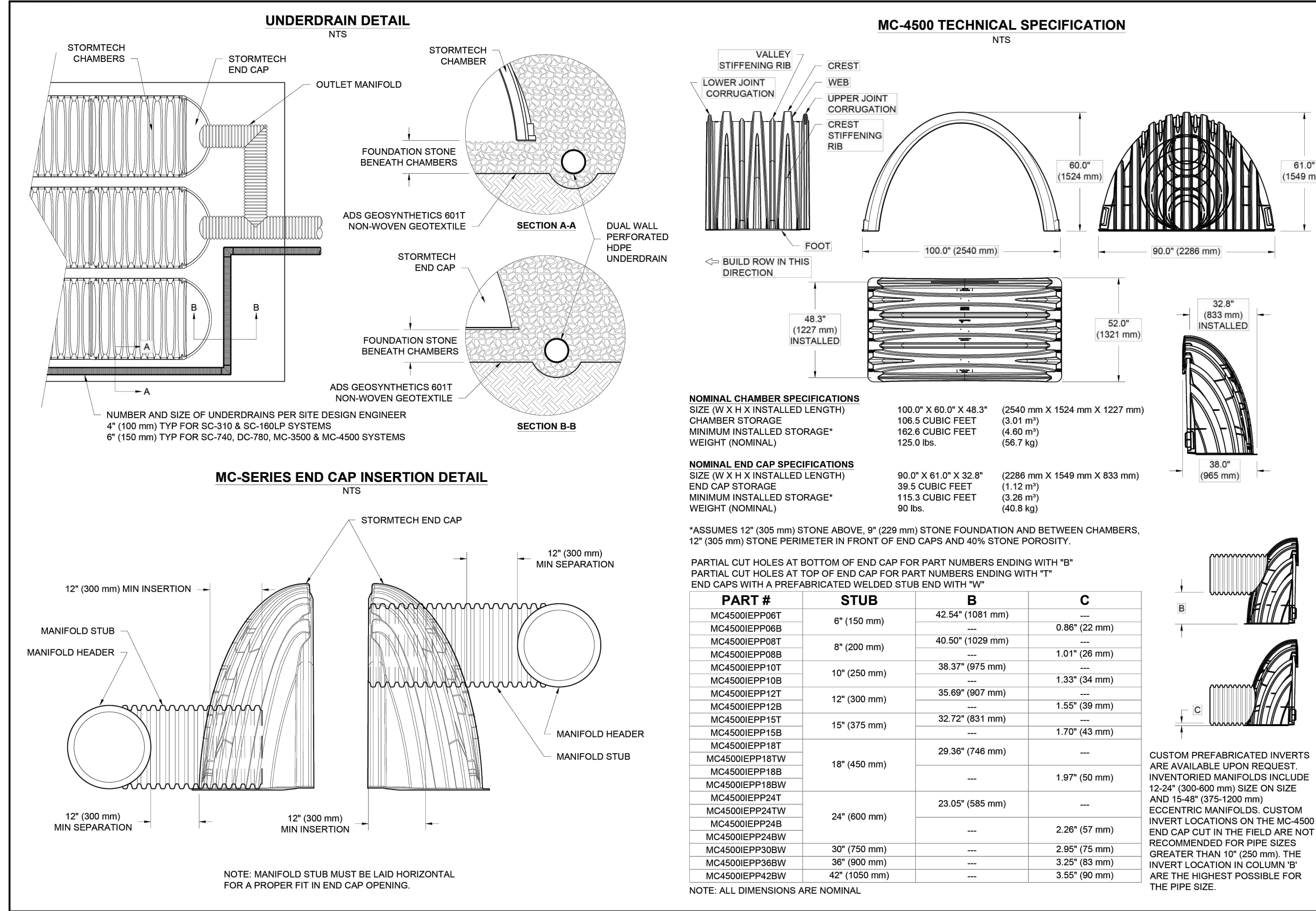
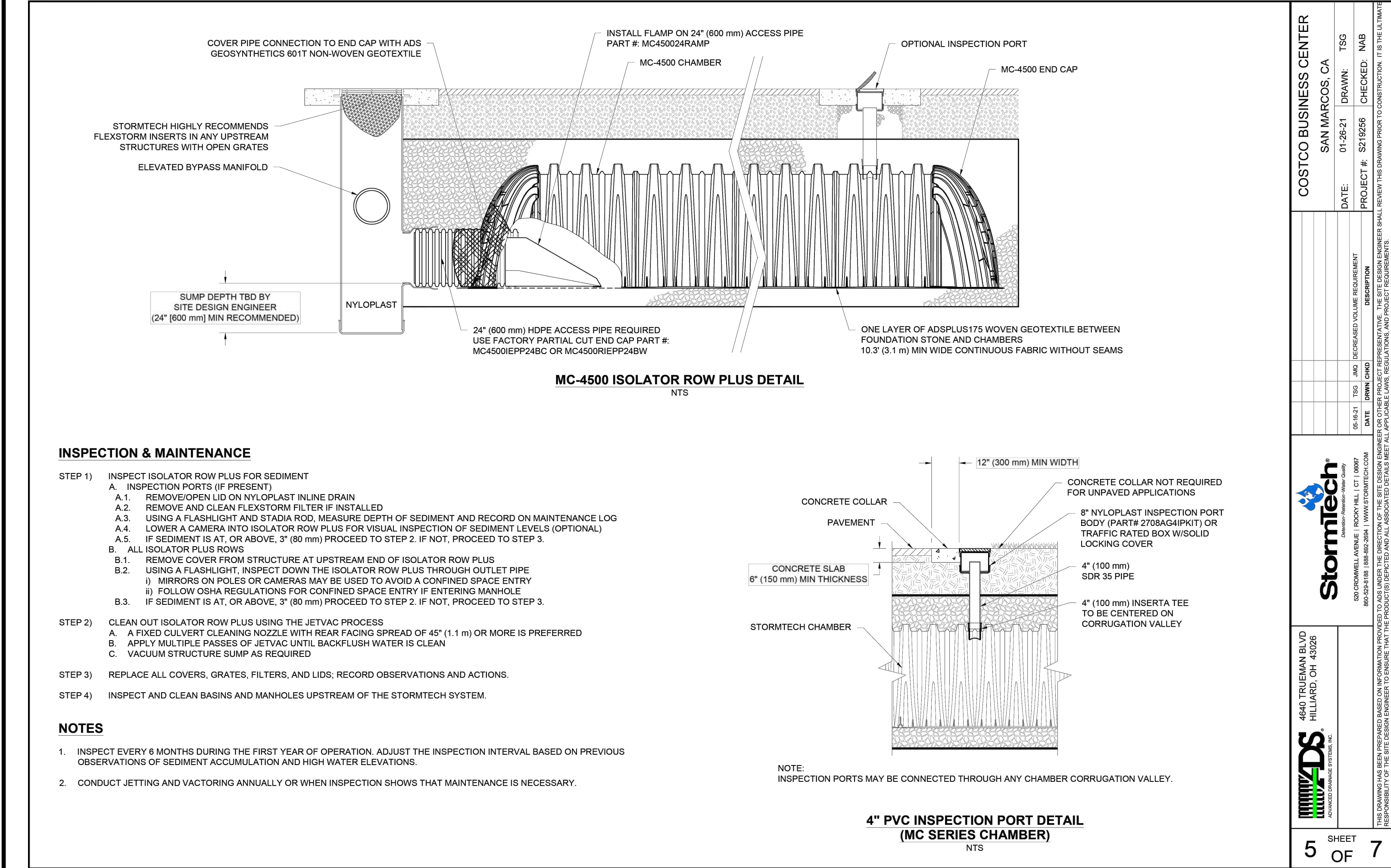
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MARK NERO RCE NO.80066 EXP. 09/30/26

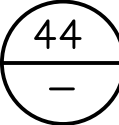
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Sheet 17 of 20

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ADS STORMTECH CHAMBER SYSTEM



PREPARED BY:

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Irvine, California 92618
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fuscoe.com

REGISTERED PROFESSIONAL ENGINEER
MARK A. NERO
NO. 80066
CIVIL
STATE OF CALIFORNIA

MARK NERO RCB NO.80066 EXP. 09/30/26

ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date: 08/20/24 Name: MARK NERO R.C.E.: 80066 exp: 9/30/26	Description: 3" BRASS DISC IN STD ST C/L WELL NON ENCLOSURE STAMPED "SM RCE 16421" Location: AT INT LINDA VISTA DR & GRAND AVE. PT ED & TIED USING GPS ON ROS 13928 Record From: RECORD OF SURVEY 13928 Elev.: 543.629 Datum: NGVD29

ENGINEER OF WORK AS-BUILT CERTIFICATE

MARK NERO, PE RCE 80066 EXP. 9/30/2026

DATE

CITY OF SAN MARCOS
CONCEPTUAL GRADING PLANS FOR:
COSTCO GAS STATION
STORM DRAIN DETAILS

PLANNING PROJECT NO.
CUP23-0004

Sheet 18 of 20

PREPARED BY:

FUSCOE

ENGINEERING

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Irvine, California 92618
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REGISTERED PROFESSIONAL ENGINEER
MARK K. NERO
NO. 80066
CIVIL
STATE OF CALIFORNIA

MARK NERO RCE NO.80066 EXP. 09/30/26

PLAN VIEW

BIO CLEAN SYSTEM LOCATION MAY VARY

PEAK FLOW OUTLET LOCATION MAY VARY

DVERT OUTLET LOW FLOWS (#8" PIPE) TO BIO CLEAN SYSTEM LOCATION MAY VARY

1" MIN

BIO CLEAN DVERT

SITE CURB AND GUTTER PER CIVIL PLANS SUPPLIED BY OTHERS

CURB OPENING

DVERT LENGTH = CURB OPENING WIDTH PER CIVIL PLANS

ELEVATION VIEW

TOP OF CURB ELEVATION PER CIVIL PLANS

DVERT OUTLET LOW FLOWS (#8" PIPE) TO BIO CLEAN SYSTEM LOCATION MAY VARY

LOW FLOW OUTLET TOP OF CURB -2.00'

BYPASS OUTLET ELEVATION PER CIVIL PLANS LOCATION MAY VARY

CURB INLET/CATCH BASIN PER CIVIL PLANS SUPPLIED BY OTHERS

BIO CLEAN DVERT MIN. SLOPE 0.50%

SECTION VIEW

CURB OPENING

DVERT OVERFLOW BYPASS TOP OF CURB -1.33' TREATMENT HGL

LIMITS OF OPTIONAL CURB INLET WING

DVERT END VIEW

10"

8"

ISOMETRIC VIEW

CURB INLET/CATCH BASIN

DVERT OUTLET LOW FLOWS (#8" PIPE) TO BIO CLEAN SYSTEM LOCATION MAY VARY

BIO CLEAN DVERT MIN. SLOPE 0.50%

INSTALLATION NOTES

- DVERT TO BE CONNECTED TO CONCRETE BELOW CURB OPENING USING 316 STAINLESS STEEL (MIN 1/4") DRIVE PIN ANCHORS SPACED 12" ON CENTER AND 316 STAINLESS STEEL RIVETS (MIN 3/16").
- ALL SEAMS BETWEEN DVERT AND CONCRETE SHALL BE FILLED WITH WATERTIGHT CONCRETE FILLER AND/OR SILICONE SEALANT.
- CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. PIPES CANNOT INTRUDE BEYOND FLUSH. INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH THE FLOWLINE OF THE DVERT. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
- CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF MODULAR WETLANDS (MWS) UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

ALTERNATE CONFIGURATIONS
CONTACT BIO CLEAN FOR ADDITIONAL CUSTOM CONFIGURATIONS

MAXIMUM LOW FLOW DIVERSION (CFS)	0.74
LOW FLOW OUTLET PIPE SIZE (INCHES)	#8"
STATIC HEAD (INCHES)	8"
SAFETY FACTOR	2

DVERT DVT-10-8
MODULAR TROUGH DIVERSION SYSTEM
STANDARD DETAIL

BioClean
A Forterra Company

PROPRIETARY AND CONFIDENTIAL:
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF FORTERRA AND ITS COMPANIES. THIS DOCUMENT, WHOR ANY PART THEREOF, MAY BE USED, REPRODUCED OR MODIFIED IN ANY MANNER WITH OUT THE WRITTEN CONSENT OF FORTERRA.

DVERT DETAIL

45

ENGINEER OF WORK	BENCH MARK	CITY OF SAN MARCOS CONCEPTUAL GRADING PLANS FOR: COSTCO GAS STATION STORM DRAIN DETAILS	PLANNING PROJECT NO. CUP23-0004
By: FUSCOE ENGINEERING, INC Date:08/2024	Description: 3" BRASS DISC IN STD ST C/L WELL NON ENCLOSURE STAMPED "CSM RCE 16421"		Sheet 19 of 20
Name: MARK NERO	Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED & TIED USING GPS ON ROS 13928		
R.C.E.: 80066 exp: 9/30/26	Record From: RECORD OF SURVEY 13928 Elev.: 543.629 Datum: NGVD29		

ENGINEER OF WORK AS-BUILT CERTIFICATE
MARK NERO, PE RCE 80066 EXP. 9/30/2026
DATE

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12/23/2024 COSTCO GAS STATION PRECISE GRADING PLAN CONCEPT PLAN SET

POLLUTION PREVENTION NOTES

In order to meet the requirements of the National Pollutant Discharge Elimination System (NPDES) program for construction, construction contractors shall install and maintain appropriate Best Management Practices (BMPs), as shown in the Erosion and Sediment Control Plan, on all construction projects. BMPs shall be installed in accordance with industry recommended standards, and/or in accordance with any General Construction Permit issued by the state for the project to prevent any discharges from the project site or into any storm drain facilities. All sediments, construction materials, debris and wastes, and other pollutants must be retained on site and may not be transported from the site via sheet flow, swales, area drains, natural drainage courses, wind, or vehicle tracking. Under direction of the Engineer of Record, erosion and/or sediment control devices shall be modified as needed as the project progresses to ensure effectiveness.

Erosion and Sediment Control Requirements

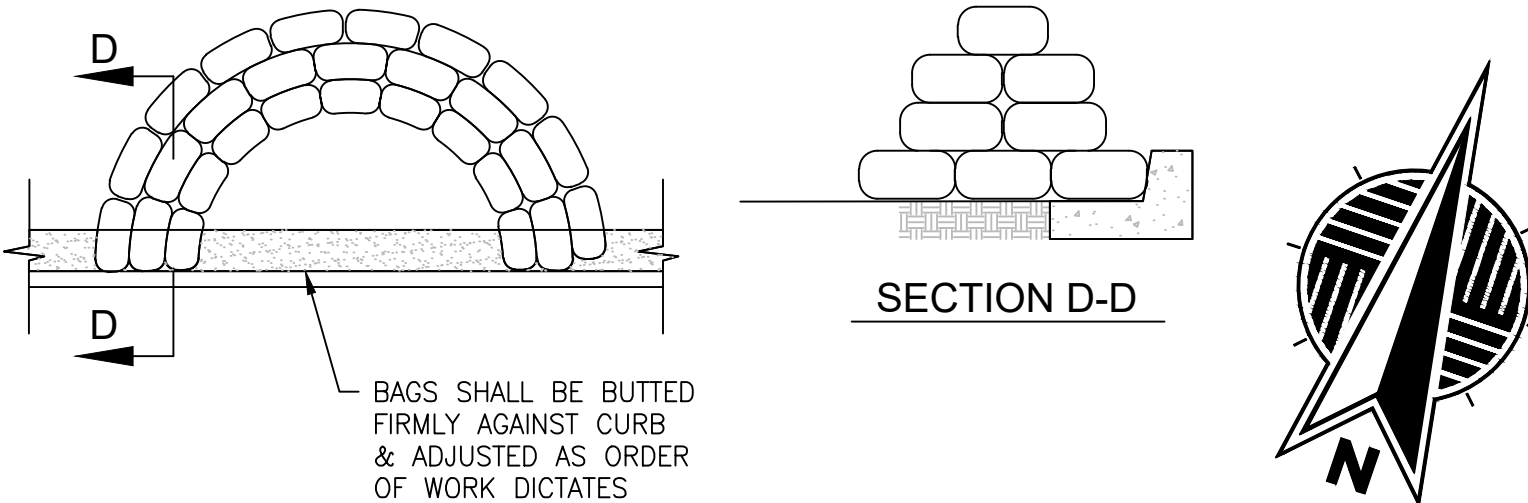
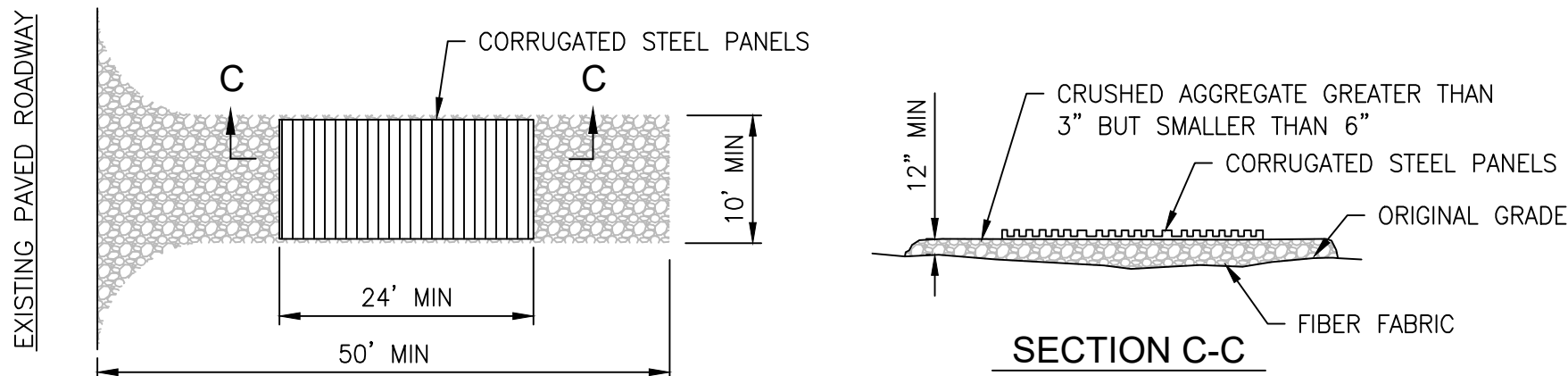
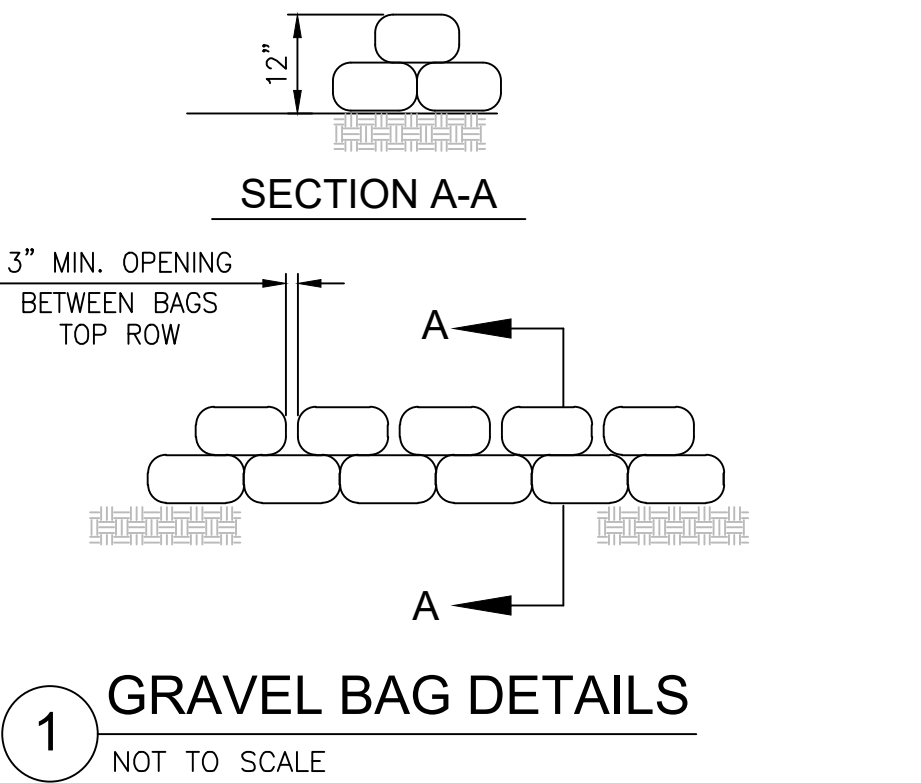
Requirements	SPECIFIED BMPs BMP Detail(s)/ Sheet Number
A. Wind erosion BMPs (dust control) shall be implemented.	WE – 1
B. Sediment control BMPs shall be implemented at the site perimeter, at all operational storm drain inlets and at all non-active slopes.	SE – 1, 2, 3, 4, SE – 6, 7, 8, 10
C. BMPs to control off-site sediment tracking shall be implemented and maintained.	TC – 1, 2
D. Appropriate waste management and material pollution control BMPs shall be implemented to prevent the contamination of stormwater by wastes and construction materials.	WM – 1, 2, 3, 4, 5, 6, 8, 9, 10
E. Appropriate non-stormwater BMPs shall be implemented to prevent the contamination of stormwater from construction activities.	NS – 1, 2, 3, 5, 6, 7 NS – 8, 9, 10, 12, 13
F. Adequate physical or vegetation erosion control BMPs (temporary or permanent) shall be installed and established for all completed slopes. If a selected BMP fails, it must be repaired and improved, or replaced with an acceptable alternate as soon as it is safe to do so. The failure of a BMP may indicate that the BMP, as installed, was not adequate for the circumstances in which it was used. Repairs or replacements must result in a more robust BMP, or additional BMPs should be installed to provide adequate protection.	EC – 1, 3, 7, 9, 11, 15, 16 SE – 1, 2, 3, 4, SE – 6, 7, 8, 10
G. Adequate erosion and sediment controls must be implemented prior to the onset of a storm event for all actively graded areas.	EC – 1, 3, 7, 9, 11, 15, 16 SE – 1, 2, 3, 4, SE – 6, 7, 8, 10
H. A disturbed area that is not completed but that is not being actively graded (non-active area) shall be fully protected from erosion with the referenced temporary and/or permanent BMPs (erosion and sediment control). The ability to deploy standby BMP materials is not sufficient for these areas. Erosion and sediment control BMPs must actually be deployed. This includes all building pads, unfinished roads and slopes.	EC – 1, 3, 7, 9, 11, 15, 16 SE – 1, 2, 3, 4, SE – 6, 7, 8, 10
I. Sufficient materials needed to install referenced standby erosion and sediment control BMPs necessary to completely protect the exposed portions of the site from erosion and to prevent sediment discharges shall be stored on site. Areas that have already been protected from erosion using permanent physical stabilization or established vegetation stabilization BMPs are not considered "exposed" for purposes of this requirement.	EC – 1, 3, 7, 9, 11, 15, 16 SE – 1, 2, 3, 4, SE – 6, 7, 8, 10

NOTE: For Risk Level 2 and 3 sites, there shall be a "Rain Event Action Plan" and the ability to deploy standby erosion and sediment control BMPs as needed to completely protect the exposed portions of the site within 48 hours of a predicted storm event (a predicted storm event is defined as a forecasted 50% chance of rain).

EROSION CONTROL NOTES:

(GRAVEL BAG)

- GENERAL: GRAVELBAG SHALL INCLUDE PROVIDING ALL LABOR, MATERIALS, AND EQUIPMENT TO FABRICATE AND INSTALL GRAVELBAGS AS REQUIRED TO FACILITATE THE CONTROL OF EROSION.
- LOCATION: GRAVELBAGS SHALL BE PLACED PER PLAN, AND IN LOCATIONS SPECIFIED BY THE COUNTY, AND IN LOCATIONS DEEMED NECESSARY BY THE CONTRACTOR.
- FABRICATION: GRAVELBAGS SHALL BE FABRICATED USING FACTORY SEWN OR SEALED BAGS OF WOVEN POLYPROPYLENE, TREATED TO RESIST DEGRADATION BY ULTRAVIOLET LIGHT AND HAVING SUFFICIENT RESISTANCE TO TEARING TO ALLOW RELOCATION OF BAGS WITHIN SIX MONTHS OF INITIAL PLACEMENT WITH A LOSS OF NOT MORE THAN FIVE PERCENT OF THE BAGS.
THE BAGS SHALL BE FILLED WITH SUBROUNDED TO ROUNDED GRAVEL LESS THAN 3/4-INCH IN DIAMETER, WITH LESS THAN FIVE PERCENT OF MATERIAL PASSING A NO. 30 SIEVE. THE FILLED BAGS SHALL HAVE THE OPEN ENDS SECURELY FASTENED PRIOR TO DELIVERY TO THE SITE.
- INSTALLATION: GRAVELBAGS SHALL BE INSTALLED IN A MANNER TO ENTRAP SILT AND MUD, AND TO DIVERT THE FLOW OF WATER. NOTWITHSTANDING THE OTHER REQUIREMENTS OF THIS SPECIFICATION, FAILURE OF THE BAGS TO PERFORM THIS FUNCTION SHALL BE REASON TO REJECT THEIR INSTALLATION.
GRAVELBAGS SHALL BE INSTALLED WITH THE WIDEST FACE AGAINST THE GROUND SURFACE OR THE UNDERLYING COURSE OF BAGS, AND PRESSED IN PLACE TO CONFORM TO THE UNDERLYING SURFACE. THE BAGS SHALL BE PLACED WITH THE TIED ENDS IN THE "UPHILL" OR "UPSTREAM" DIRECTION, BEGINNING AT THE LOWEST OR MOST DOWNSTREAM BAG. TIED ENDS WILL BE TUCKED UNDER BAG. SUBSEQUENT BAGS WITHIN ONE COURSE OF BAGS SHALL BE PLACED SO AS TO REST UPON THE TIED END OF THE PREVIOUSLY PLACED BAG, WITH NOT LESS THAN 10 PERCENT OF THE BAG IN CONTACT WITH THE PREVIOUS BAG, AND NOT MORE THAN 20 PERCENT IN CONTACT.
SUBSEQUENT COURSES OF BAGS SHALL BE PLACED AS DESCRIBED PREVIOUSLY, WITH THE MID-POINT OF THE BAGS STRADDLING THE JOINTS OF BAGS IN THE UNDERLYING ROW.
CONSTRUCTION OF A GRAVELBAG BERM PERPENDICULAR TO THE DIRECTION OF FLOW SHALL INCORPORATE BAGS PLACED IN A "PYRAMID" CONFIGURATION, WITH ALL INDIVIDUAL BAGS ORIENTED PERPENDICULAR TO THE DIRECTION OF FLOW. THE BERM SHALL BE CONSTRUCTED WITH A SPECIFIED NUMBER OF ROWS AT THE BOTTOM (IN CONTACT WITH THE GROUND), WITH SUCCESSIVELY FEWER ROWS IN EACH OVERLYING COURSE. THE UPSTREAM AND DOWNSTREAM FACES OF THE BERM SHALL BE NO STEEPER THAN 1 1/2 FEET HORIZONTAL TO 1 VERTICAL.
DAMAGE WHICH COULD FORESEEABLY BE PREVENTED BY PROPER GRAVELBAG INSTALLATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- COMPENSATION: THE PERFORMANCE OF THE REQUIREMENTS OF THIS SECTION SHALL BE COMPENSATED AT THE CONTRACT UNIT PRICES FOR GRAVELBAGS.



CAUTION - NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CALL USA DIG ALERT AT 811.

NOTES TO CONTRACTOR:

STABILIZED CONSTRUCTION ENTRANCE AND RECYCLING STORAGE AREA SHALL BE DESIGNATED BY SITE SUPERVISOR AND INCLUDED ON THE SWPPP / EROSION CONTROL PLAN. AS SITE CONDITIONS CHANGE, THE SWPPP / EROSION CONTROL PLAN SHALL BE UPDATED TO REFLECT CURRENT CONDITIONS.

IT IS THE CONTRACTOR/SUPERVISOR'S RESPONSIBILITY TO KEEP THE SWPPP MAP CURRENT. BMPs SHOULD BE ADDED, MOVED OR REMOVED BASED ON SITE CONDITIONS. HAND-MARKED ALTERATIONS WITH INITIALS AND DATE ARE AN ACCEPTABLE FORM OF ALTERATION. THE CONTRACTOR MAY BE ASKED AT ANY TIME TO PRODUCE THE SWPPP MAP. FAILURE TO KEEP THE MAP CURRENT COULD RESULT IN A NOTICE OF VIOLATION AND/OR FINE.

CONTRACTOR TO PHASE CONSTRUCTION IN A MANNER THAT ACCESS TO ADJACENT BUILDINGS IS MAINTAINED DURING THE ENTIRE DURATION OF CONSTRUCTION.

BMP TABLE:

SYMBOL		DESCRIPTION
ENTIRE SITE	WE-1	WIND EROSION CONTROLS
	TC-1	CONSTRUCTION ROAD ENTRANCE
	TC-2	CONSTRUCTION ROAD STABILIZATION
	SE-6	SEDIMENT CONTROL
	SE-10	STORM DRAIN INLET PROTECTION

BMP DETAILS CAN BE OBTAINED IN THE SWPPP PREPARED FOR THIS PROJECT BY FUSCOE ENGINEERING OR
<http://www.ocwatersheds.com/documents/bmp/constructionactivities>

CERTIFICATION

I hereby certify that I have read and understand the requirements in the Construction General Permit and that the erosion control plans and BMPs shown hereon are in compliance with these requirements.

Signed by: _____ RCE/ PE Number: _____
In case of an emergency, the responsible person to be contacted shall be:
Name: _____ Title: _____
Company: _____ 24-Hr. Phone No.: _____

NOTES

A standby crew for emergency work shall be available at all times for emergency work during the rainy season (October 15 through April 15), when rain is imminent, necessary materials shall be available on site and stock piled at convenient locations to facilitate rapid construction of temporary devices or to repair any damaged erosion control measures.

Devices shall not be moved or modified without the approval of the City Inspector.

All removable protective devices shown shall be in place at the end of each working day, when the five-day rain probability forecast exceeds 40 percent.

After a rainstorm, all silt and debris shall be removed from check berms and desilting basins. Any graded slope surface protection measures damaged during a rainstorm shall also be immediately repaired.

The faces of cut and fill slopes shall be prepared and maintained to control against erosion. Erosion protection shall consist of effective planting of all slopes in excess of five (5) feet high unless otherwise approved by the City Engineer. Slopes exceeding fifteen (15) feet high may require an adequate sprinkler system, as determined by the City Engineer. The slope protection shall be installed as soon as practicable and prior to calling for final inspection.

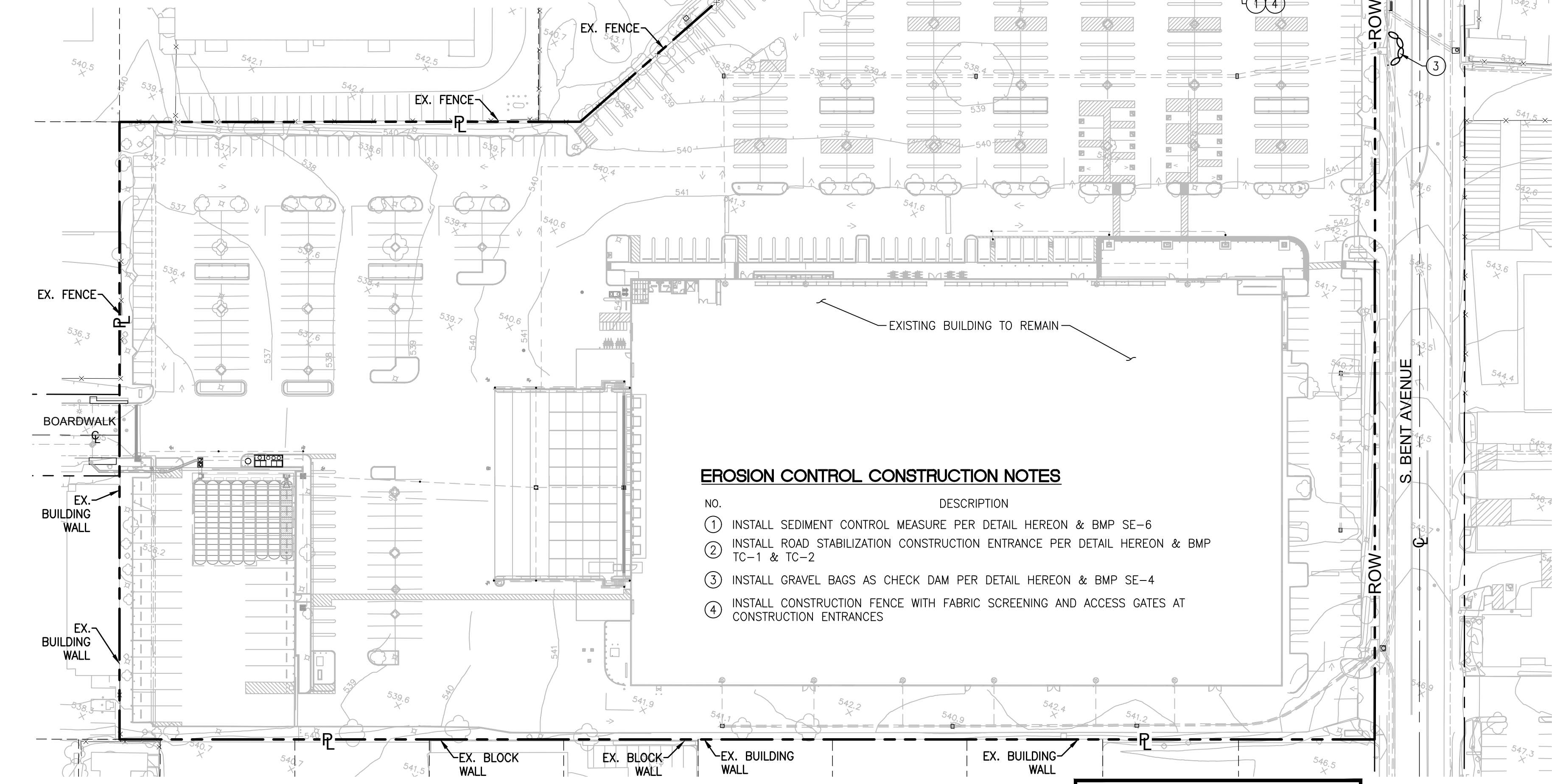
Fill slopes at the tract perimeter must drain away from the top of the slope at the conclusion of each working day.

A guard shall be posted on the site whenever the depth of water in any device exceeds two (2) feet.

SWPPP LEGEND:

CT	CONSTRUCTION TRAILER
C/C W	CHEMICAL/CONCRETE WASHOUT
P/P W	PAINT/PLASTER WASHOUT
STOCK	SAND/GRAVEL BAG STOCKPILE
STORE	STORAGE AREA
CONST	ACTIVE CONSTRUCTION AREA
DONE	COMPLETED/OCCUPIED AREA
VEH	VEHICLE/STAGING AREA

LOCATIONS WILL VARY, CONTRACTOR TO SHOW ON PLAN WHEN AND WHERE ITEMS ARE RELOCATED



EROSION CONTROL CONSTRUCTION NOTES

- NO. DESCRIPTION
1. INSTALL SEDIMENT CONTROL MEASURE PER DETAIL HEREON & BMP SE-6
 2. INSTALL ROAD STABILIZATION CONSTRUCTION ENTRANCE PER DETAIL HEREON & BMP TC-1 & TC-2
 3. INSTALL GRAVEL BAGS AS CHECK DAM PER DETAIL HEREON & BMP SE-4
 4. INSTALL CONSTRUCTION FENCE WITH FABRIC SCREENING AND ACCESS GATES AT CONSTRUCTION ENTRANCES

ENGINEER OF WORK AS-BUILT CERTIFICATE
MARK NERO, PE RCE 80066 EXP. 9/30/2026
DATE _____

PREPARED BY:

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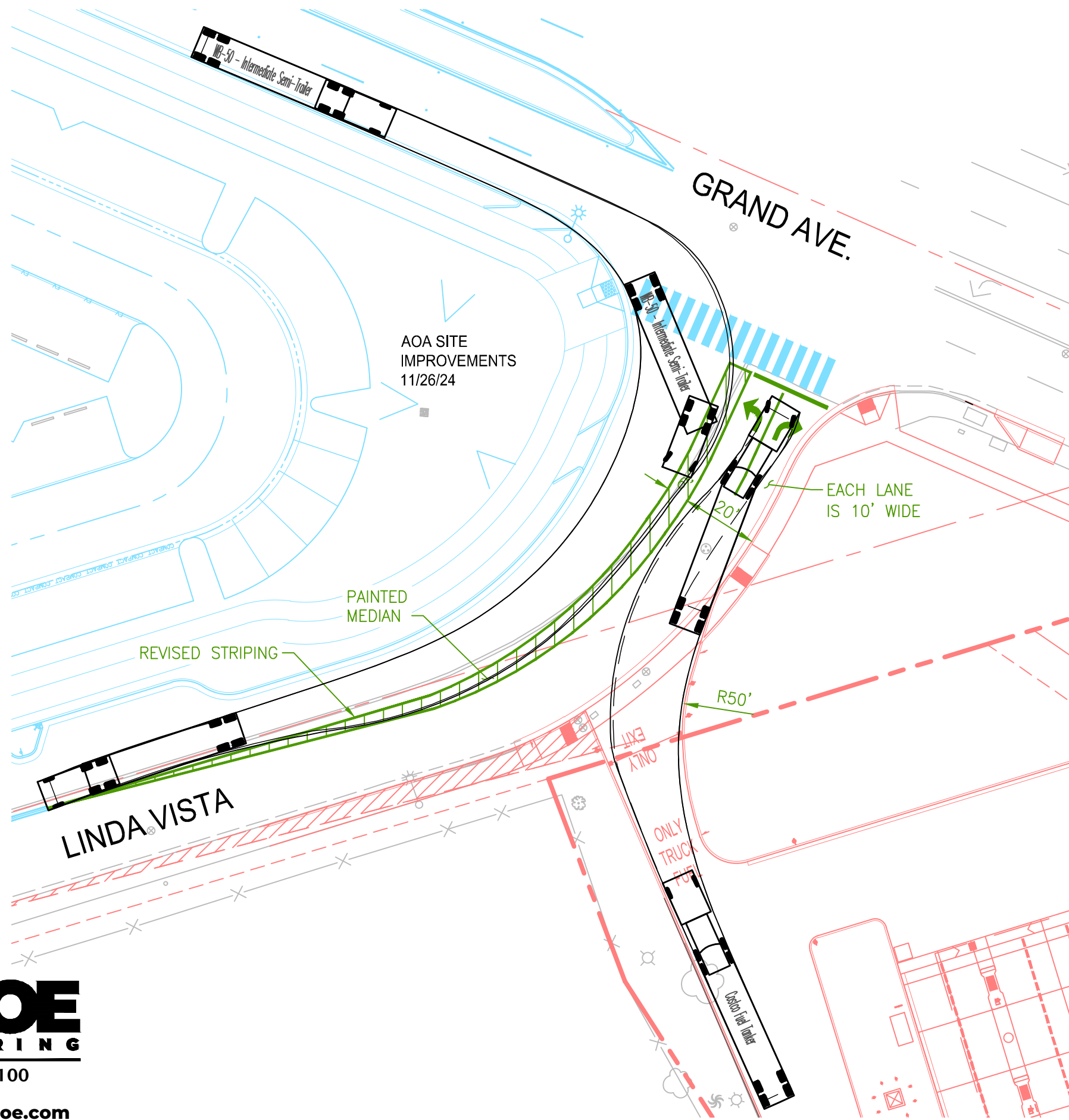


MARK NERO RCE NO.80066 EXP. 09/30/26

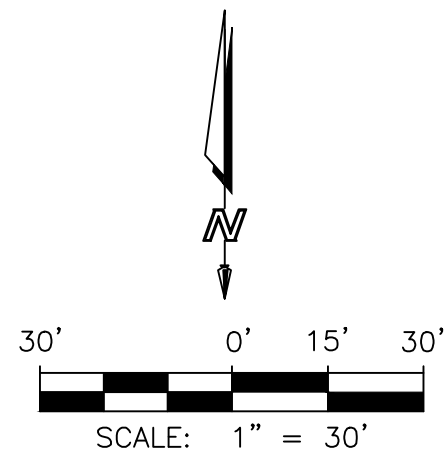
ENGINEER OF WORK	BENCH MARK
By: FUSCOE ENGINEERING, INC Date:08/2024 Name: MARK NERO R.C.E.: 80066 exp: 9/30/26	Description: 3" BRASS DISC IN STD ST C/L WELL NON-ENCLOSURE STAMPED "CIVIL RCE 16421" Location: AT INT LINDA VISTA DR & GRAND AVE, PT ED & TIED USING OPS ON ROS 13928 Record From: RECORD OF SURVEY 13928 Elev.: 543.629 Datum: NGVD29

CITY OF SAN MARCOS	PLANNING PROJECT NO.
CONCEPTUAL GRADING PLANS FOR: COSTCO GAS STATION EROSION CONTROL PLAN	CUP23-0004
Sheet 20 of 20	

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-  COSTCO GAS STATION PROJECT
-  LINDA VISTA IMPROVEMENT PROJECT
-  EXISTING TOPO

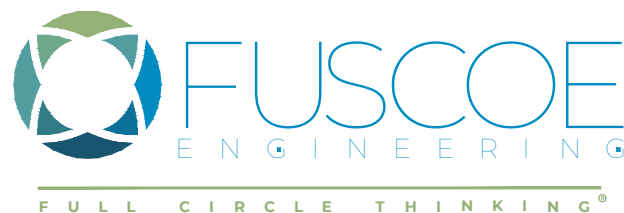
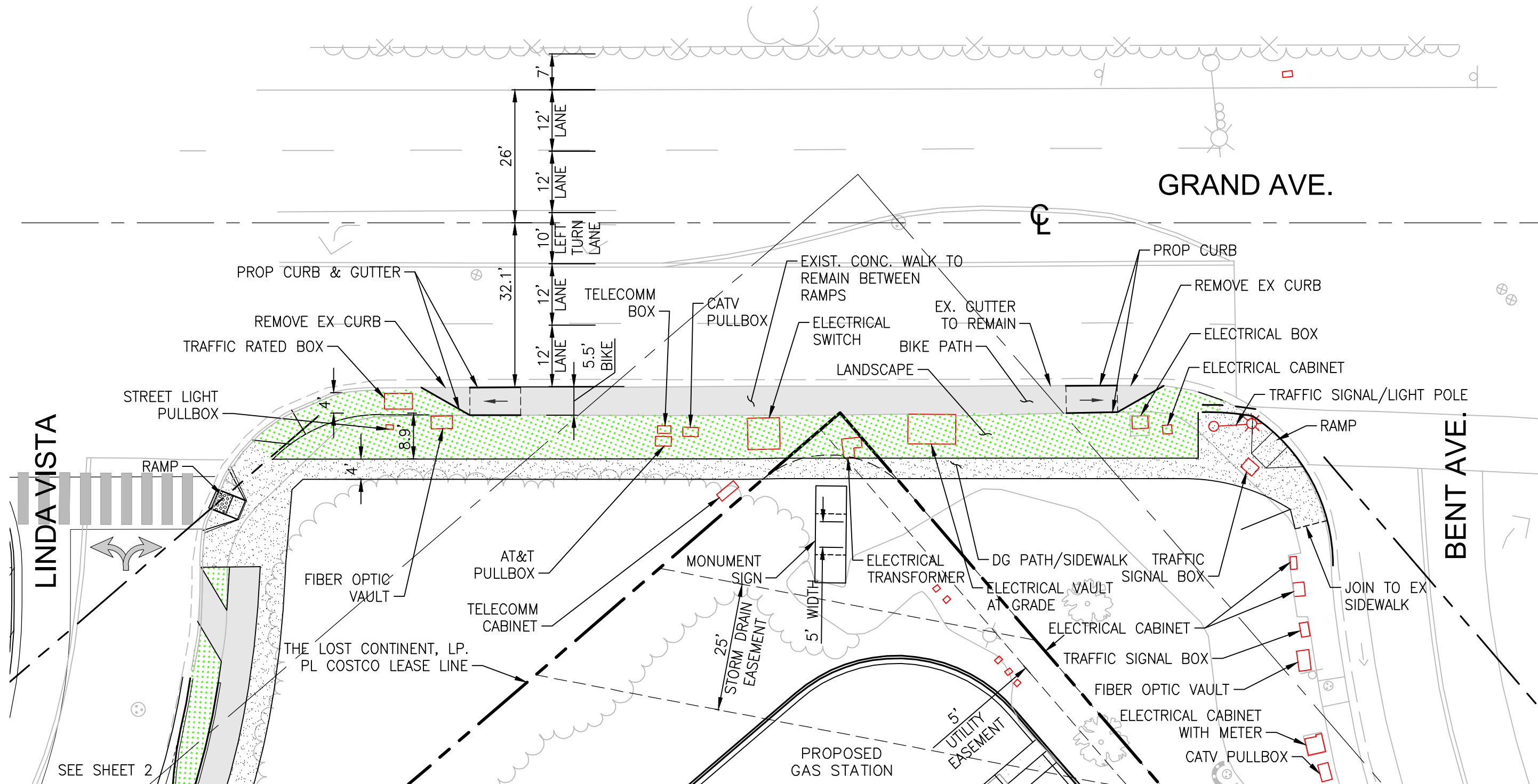


LINDA VISTA STRIPING
COSTCO GAS STATION
SAN MARCOS, CA.
11/26/2024



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fuscoe.com



15535 Sand Canyon Ave 949.474.1960
Suite 100
Irvine, California 92618 fuscoe.com

LEGEND

- AC PAVEMENT
- DG/SIDEWALK
- LANDSCAPE

GRAND AVENUE

SCALE: 1" = 20'

BIKE & PEDESTRIAN PATH STUDY
COSTCO GAS STATION
SAN MARCOS

11/15/23

SHEET 1 OF 1