

PROJECT DATA

CLIENT: **COSTCO WHOLESALE**

999 LAKE DRIVE ISSAQUAH, WA 98027

PROJECT ADDRESS:

22330 HATHAWAY AVE. HAYWARD, CA 94541

SITE AREA: 10.87 ACRES (473,566 S.F.)

BOUNDARIES **INFORMATION:**

THIS PLAN HAS BEEN PREPARED BY USING

115,707 S.F.

MULVANNY ARCHITECTS SITE PLAN DATED 2/95.

BUILDING DATA:

124,287 S.F. TOTAL EXIST. BUILDING DEMOLISH DETACHED TIRE CENTER 8,580 S.F.

INCLUDING:

EXIST. UTILITY ROOMS 420 S.F. 261 S.F. EXIST. MECHANICAL ROOM EXIST. BALER/COMPACTOR ROOM 972 S.F. EXIST. ENCLOSED CANOPY 1,831 S.F. EXIST. MEZZANINE 2,427 S.F.

EXIST. PARKING DATA:

EXISTING PARKING PROVIDED:

* STANDARD STALLS 426 STALLS # HANDICAP STALLS (2 VAN STALL) 16 STALLS # TRUCK STALLS 51 STALLS TOTAL PARKING 493 STALLS

NO. OF STALLS PER 1000 S.F.

OF BUILDING AREA: 4.29 STALLS

(*) PARKING NEEDED TO MAINTAIN 4.00 / 1000 S.F.: 463 STALLS

(*) 1.0 SPACE / 250 S.F. PER CITY OF HAYWARD MUNICIPAL CODE SECTION 10-2.330.

PROPOSED PARKING:

***** STANDARD STALLS 330 STALLS # HANDICAP STALLS (2 VAN STALL) 16 STALLS 52 STALLS # TRUCK STALLS 398 STALLS **TOTAL PARKING**

NO. OF STALLS PER 1000 S.F.

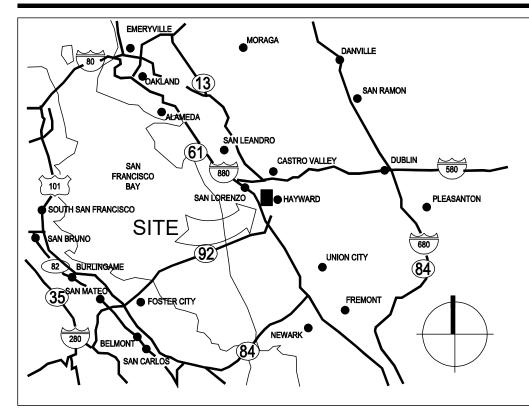
3.46 STALLS OF BUILDING AREA:

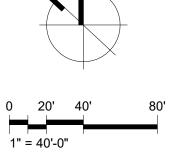
95 STALLS TOTAL PARKING LOST

FUEL FACILITY DATA:

OCCUPANCY GROUP: M (MERCANTILE) **CONSTRUCTION TYPE: FUEL CANOPY AREA:** 9,346 SF **FUEL CANOPY HEIGHT:** 17'-6" TO TOP OF CANOPY

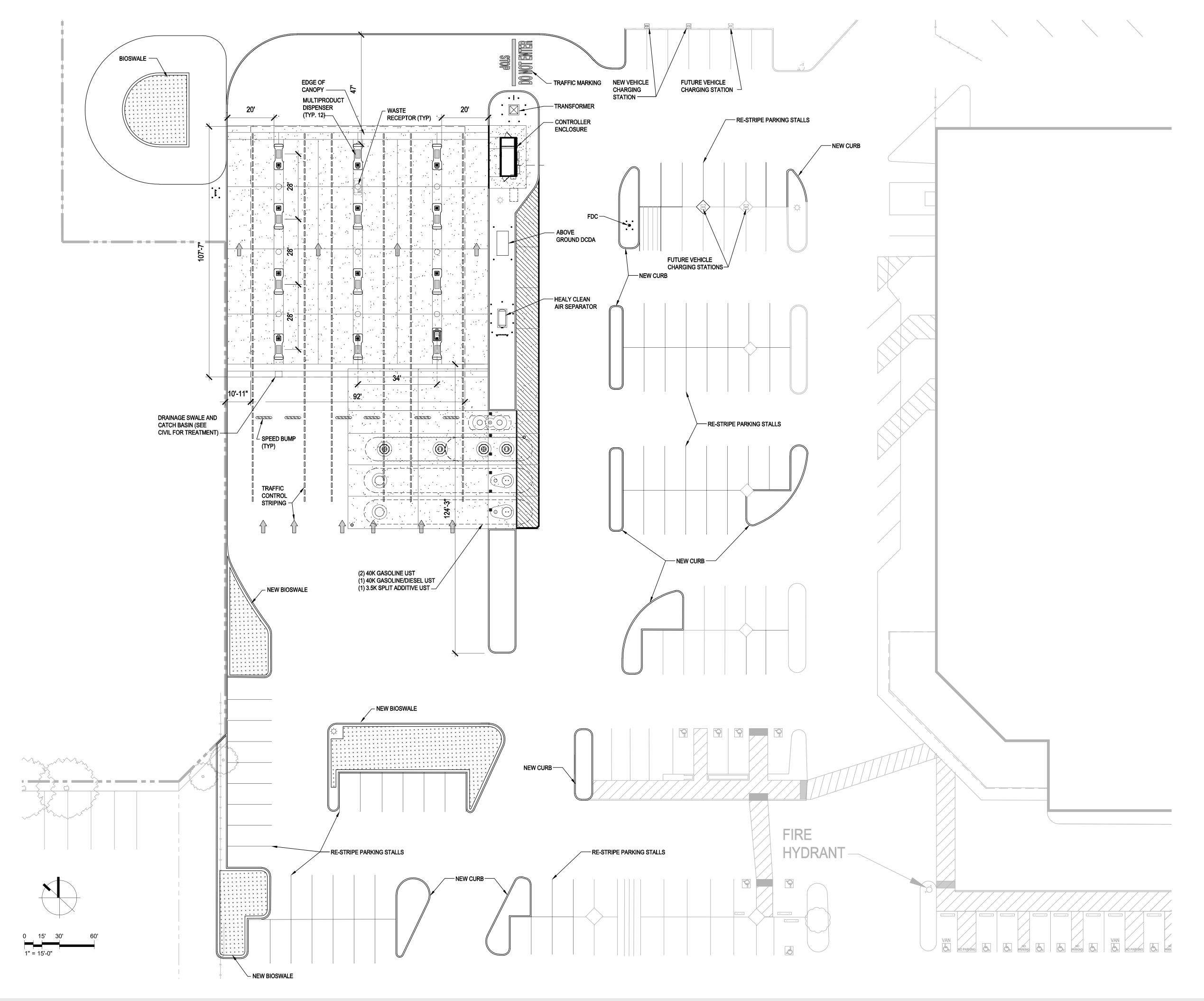
REGIONAL MAP





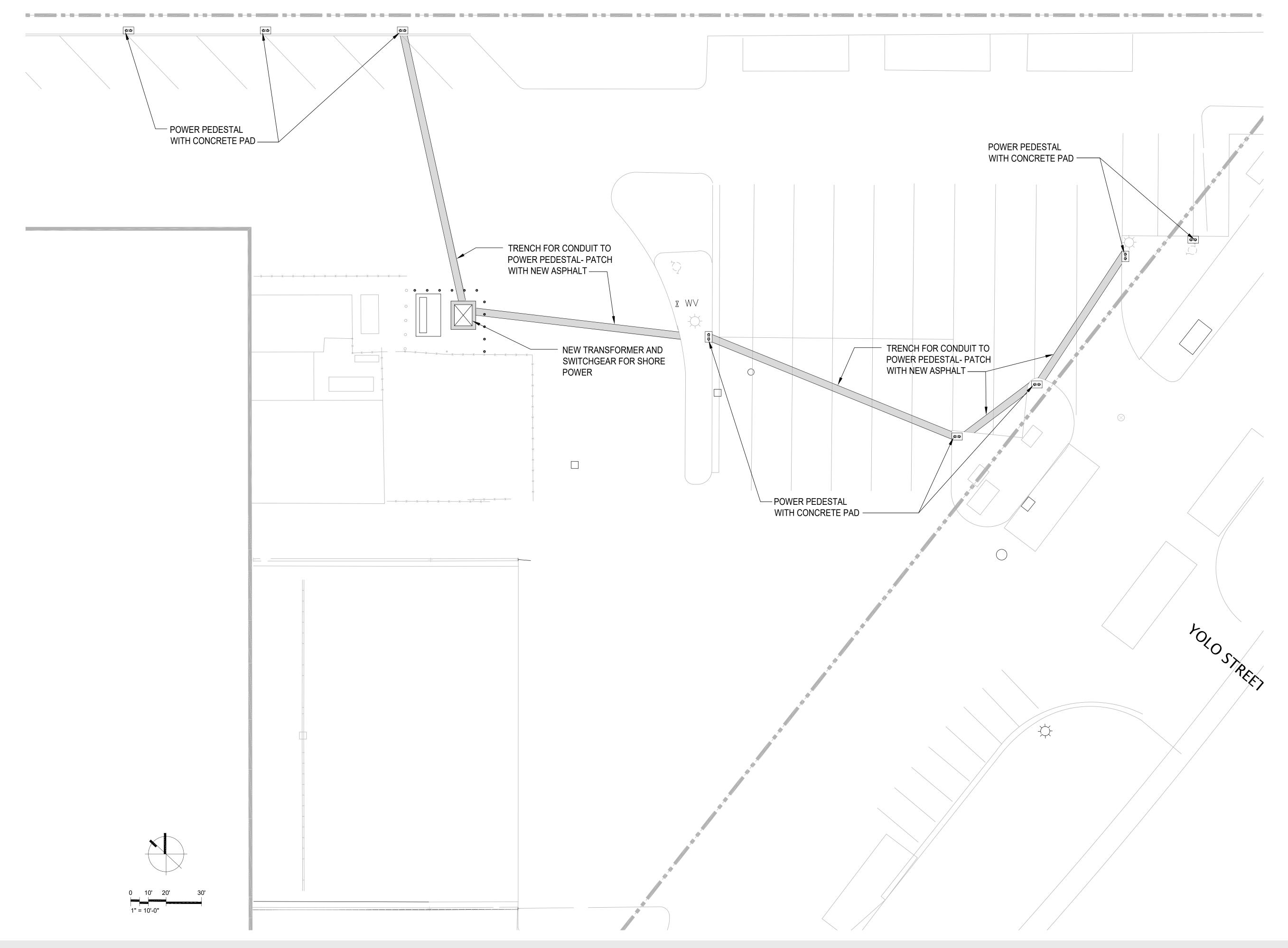








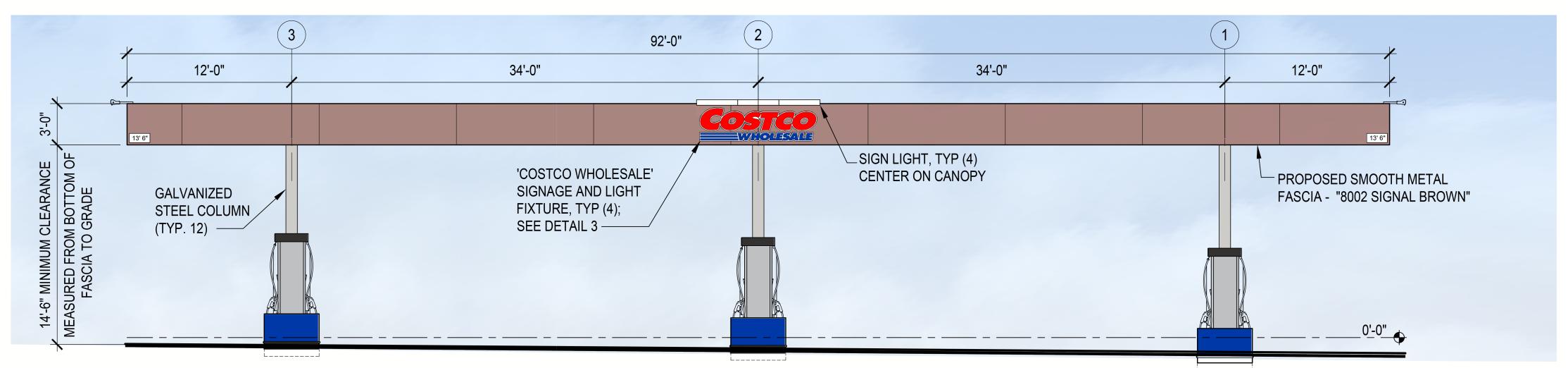








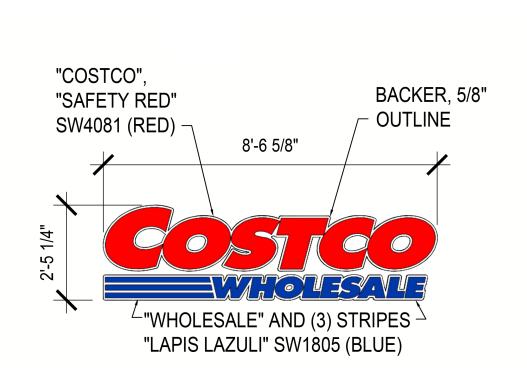




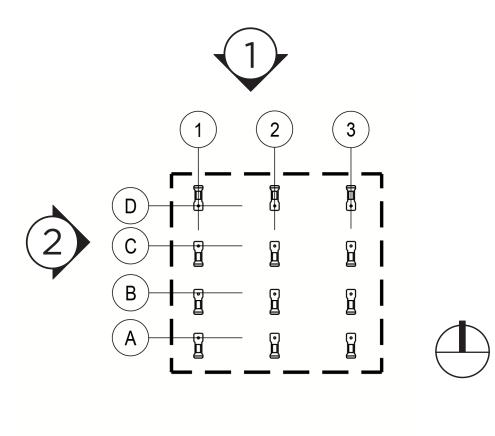
NORTH CANOPY AND DISPENSER ISLANDS (SOUTH ELEV. SIM.) SCALE: 1/4" = 1'-0"



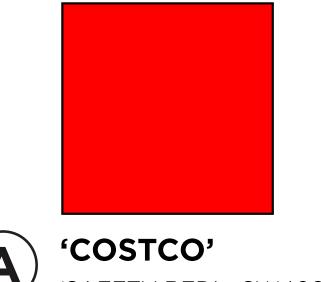
WEST CANOPY AND DISPENSER ISLANDS (EAST ELEV. SIM.) SCALE: 1/4" = 1'-0"







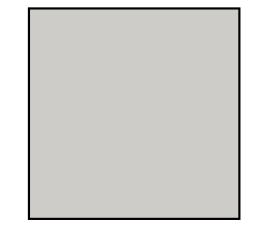




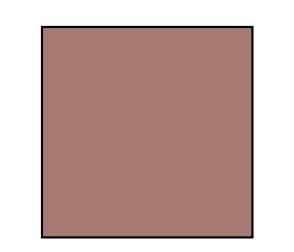








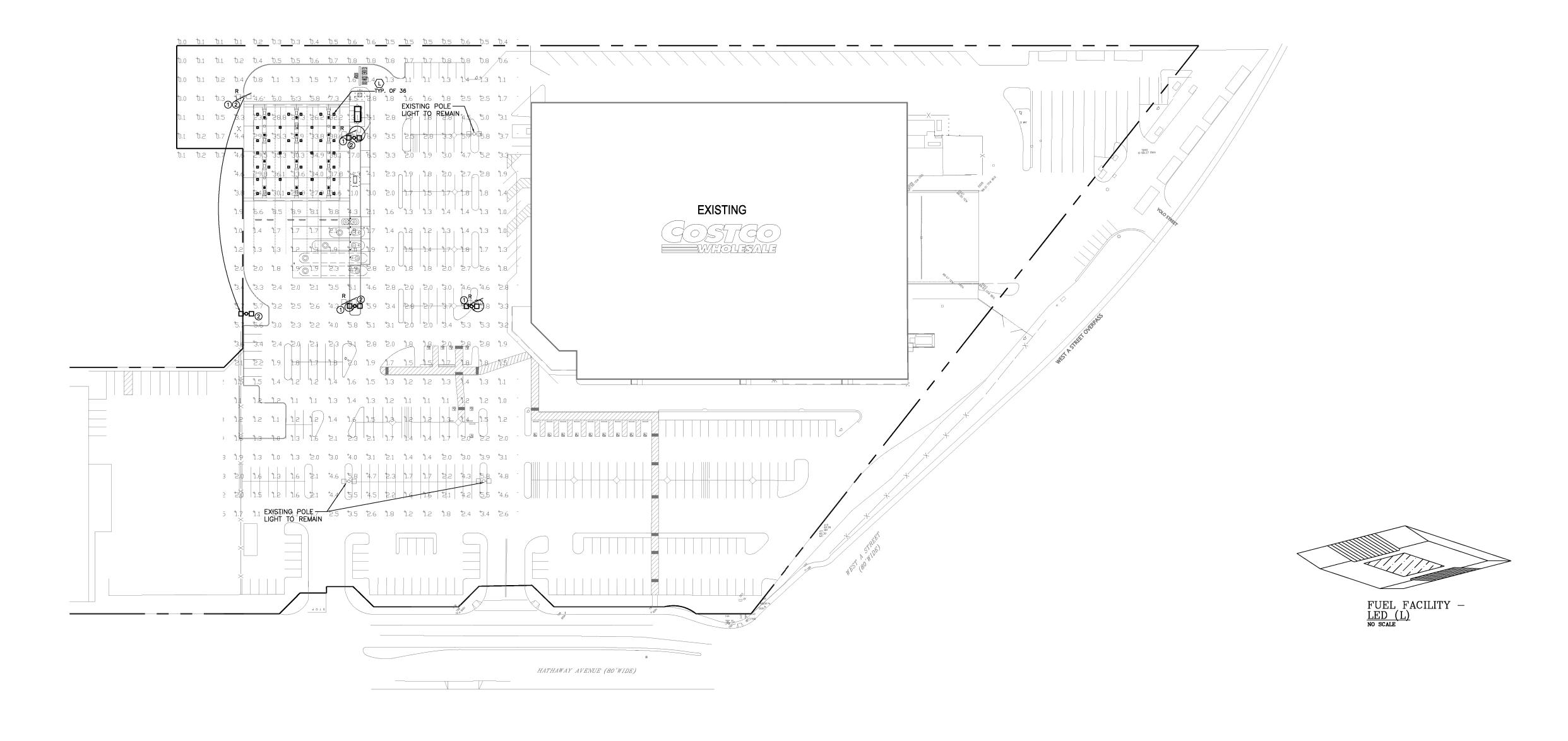




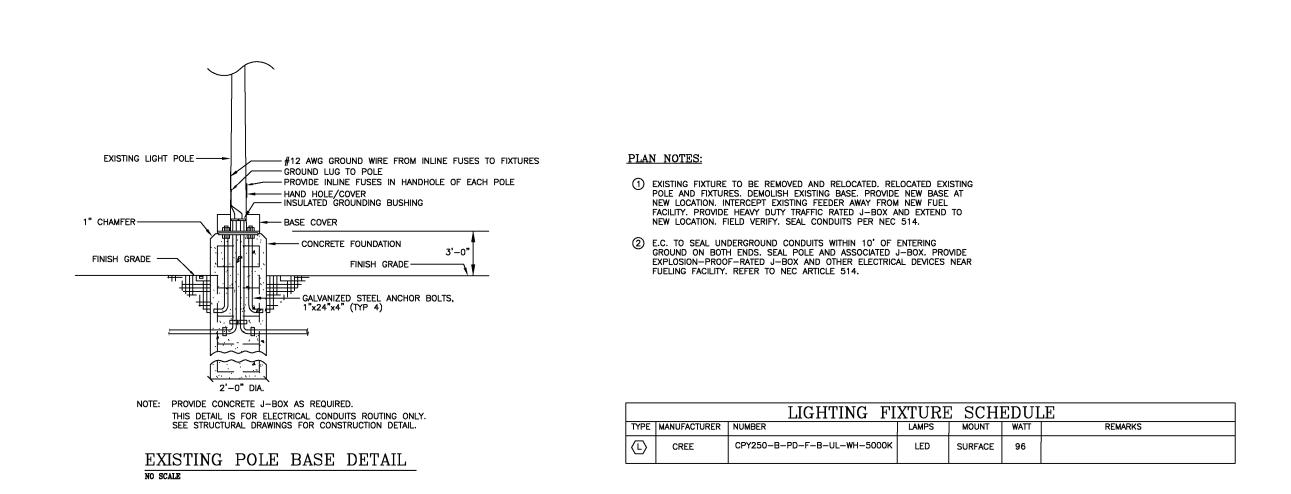
METAL COLUMN
GALVANIZED STEEL

METAL FASCIA PANEL
SPRAYLAT - 8002 SIGNAL BROV





$\frac{\text{SITE PLAN}}{\text{SCALE: } 1" = 50'}$

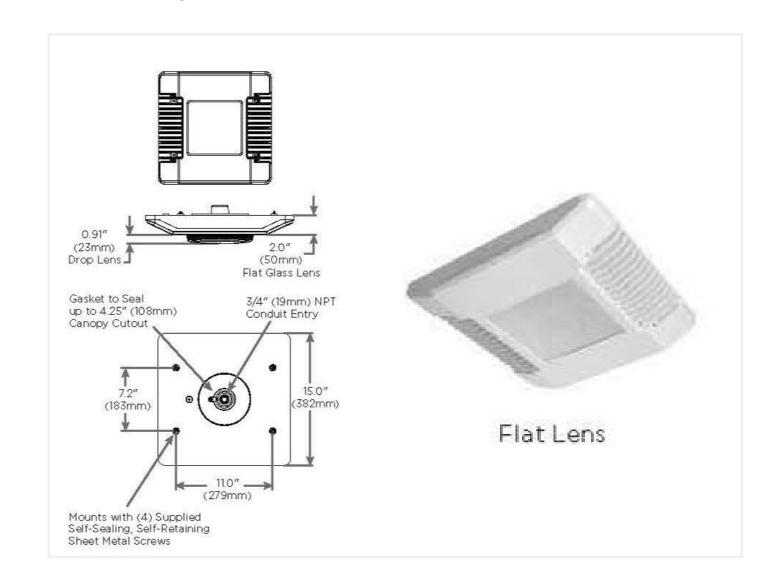






CREE CPY250 WITH FLAT LENS

CREE MODEL NO. CPY250-A-DM-F-B-UL-WH 122 WATTS



1 UNDER CANOPY LIGHTING

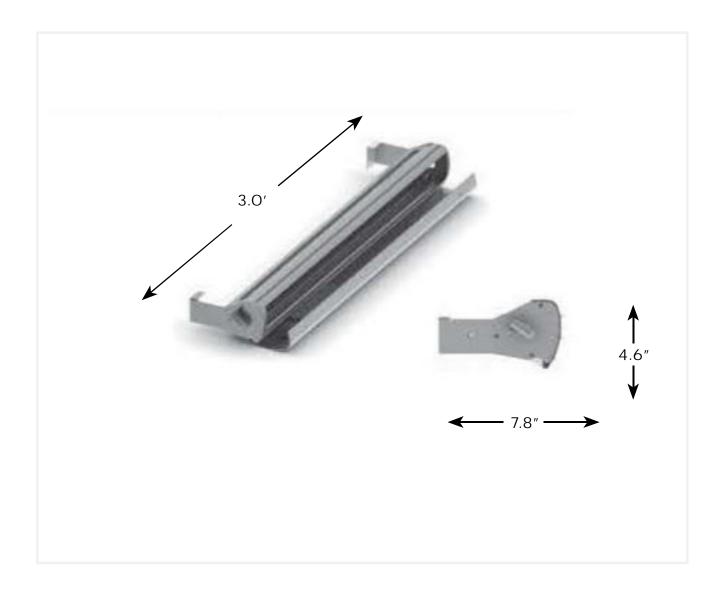
CPY250 WITH FLAT LENS

CREE LINEAR FACADE LIGHTER

CREE

MODEL NO. LFL-3-DO-UL-WH

22 WATTS



2 SIGN LIGHTING
LFL-3-DO-UL-WH

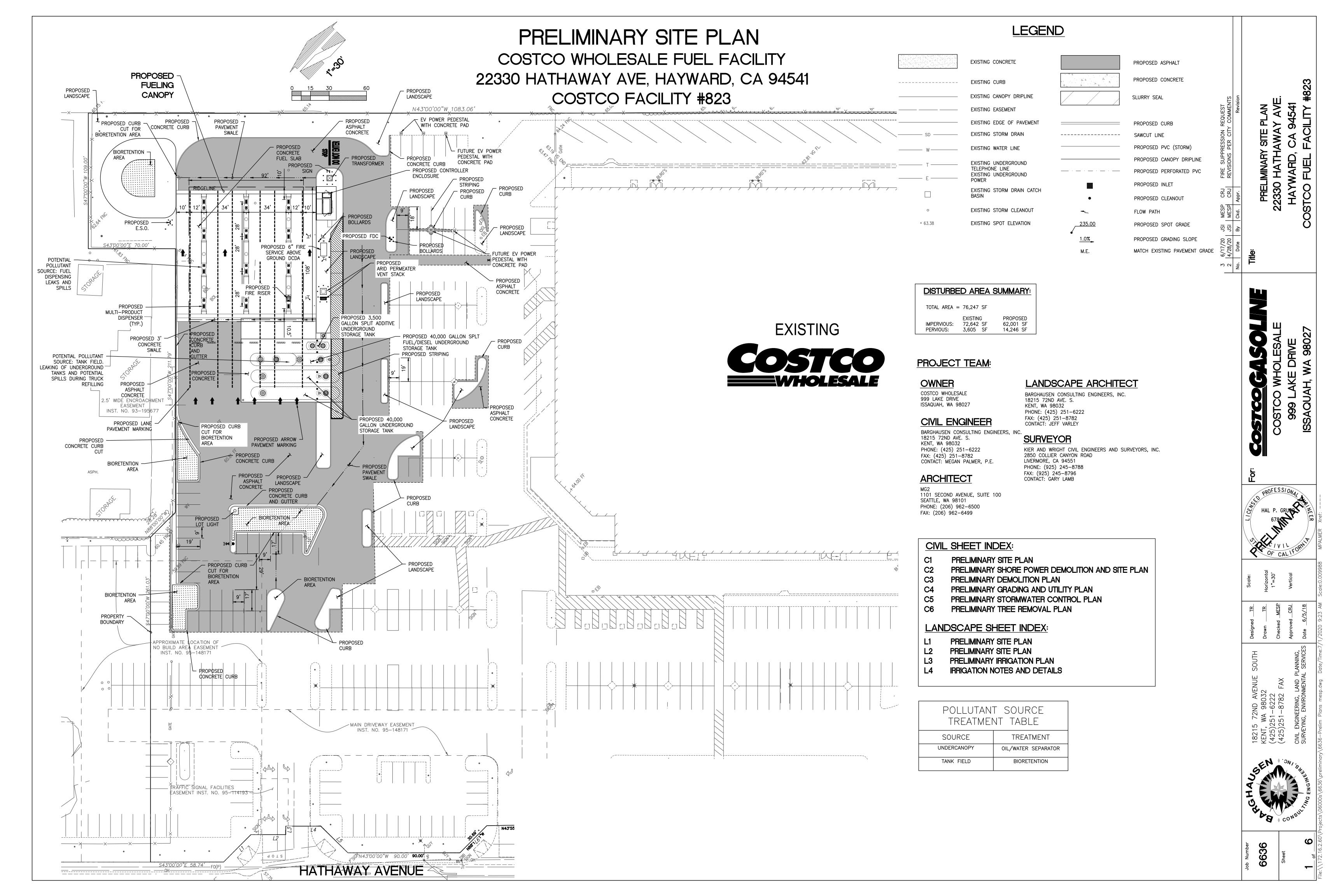
GLEON - GALLEON LED EATON COOPER LIGHTING POLE MOUNT LED

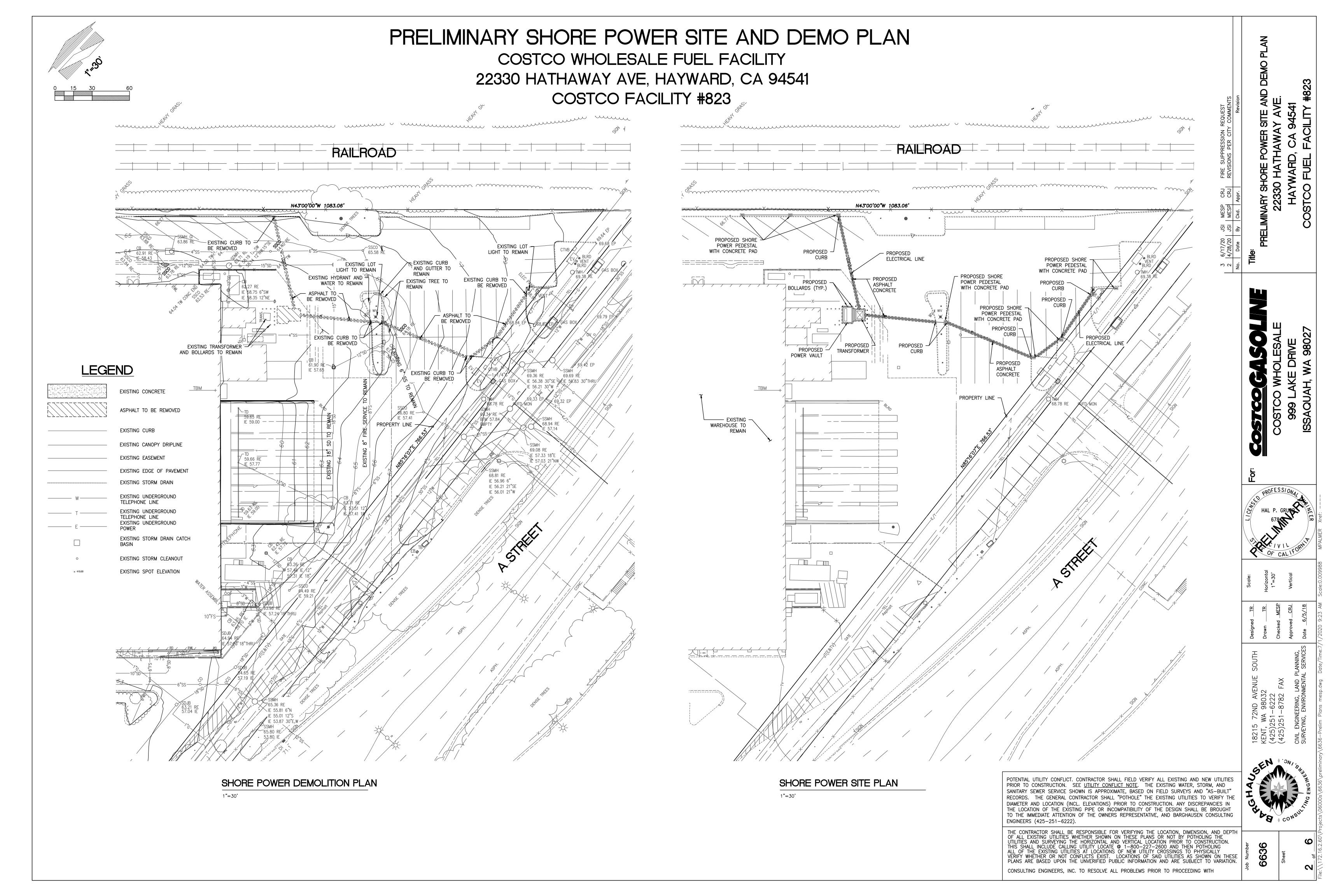


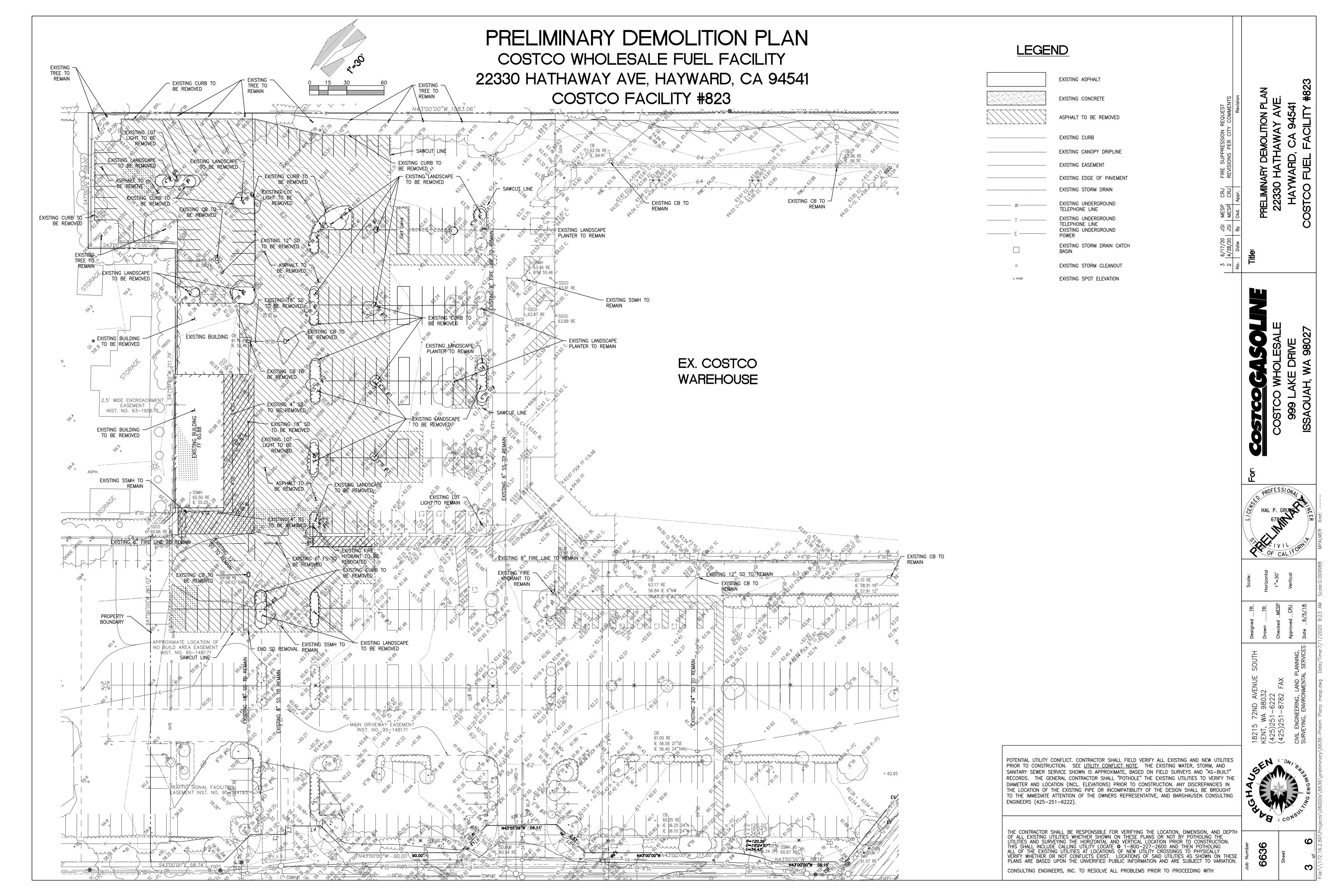
SITE LIGHTING

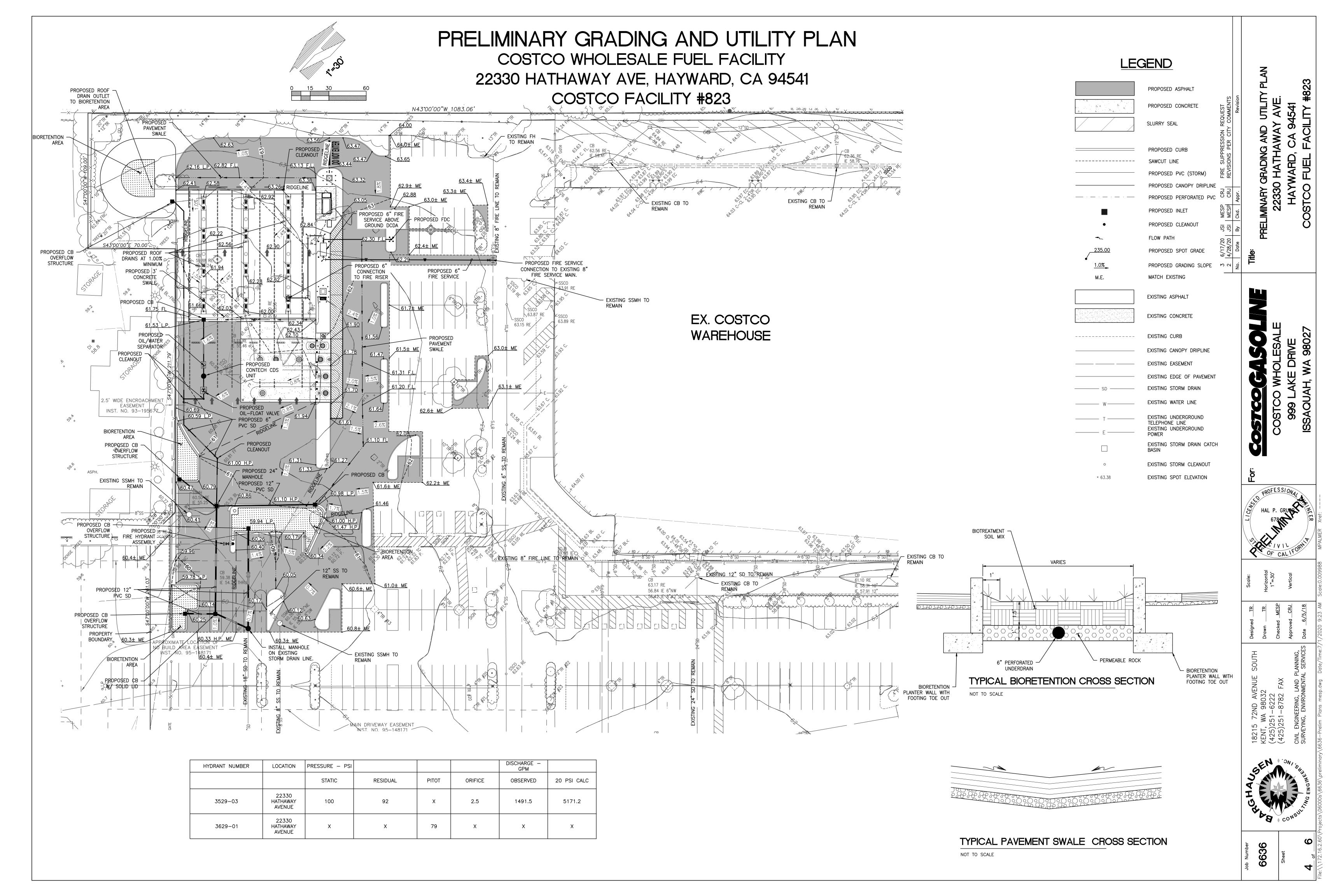
GLEON - GALLEON LED

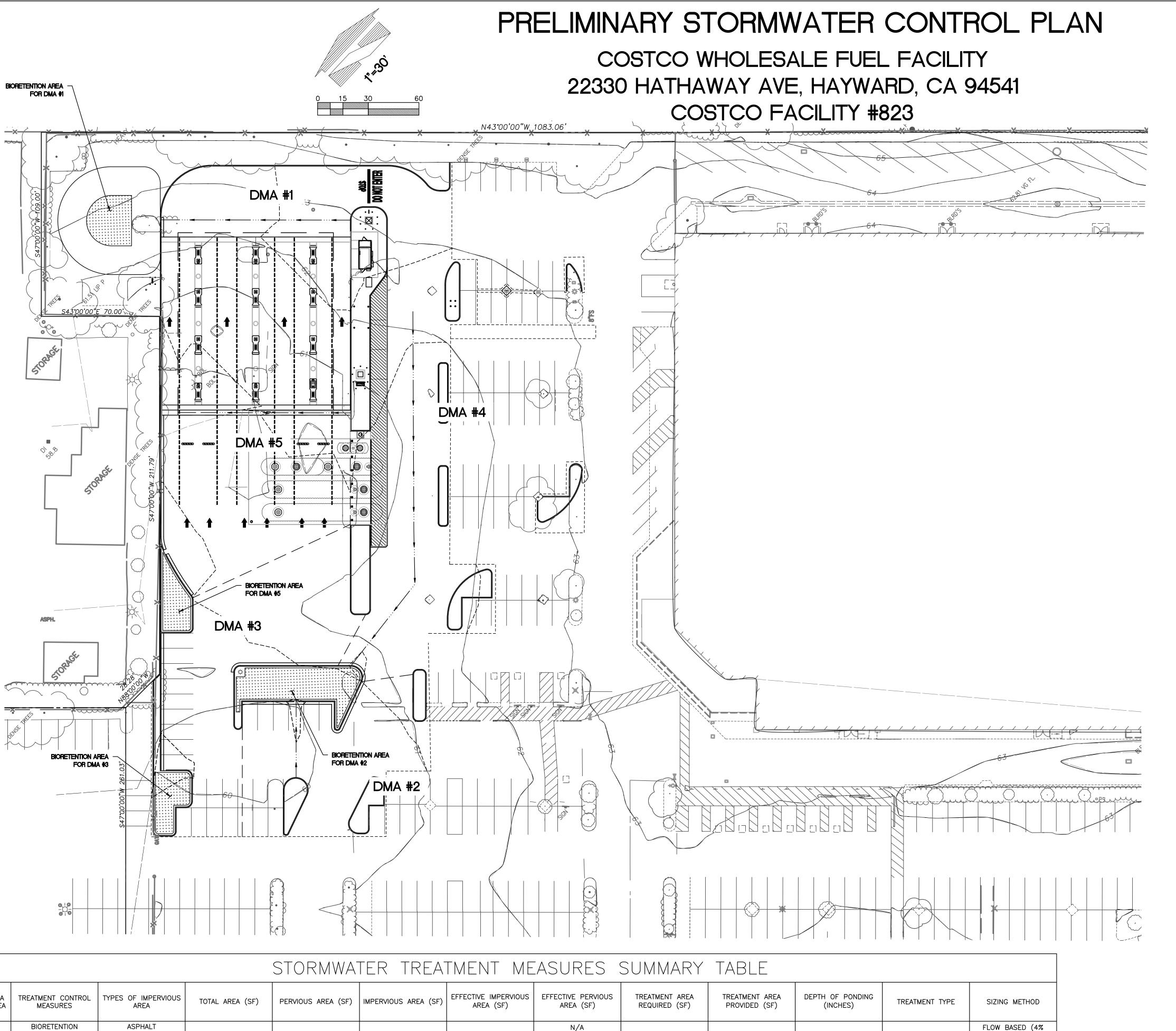












DMA AREA FLOW BASED (4% N/A PAVEMENT/CANOPY 19208 METHOD) 636 BIORETENTION 4408 14800 14800 700 (9,936 CANOPY) BIORETENTION ASPHALT PAVEMENT FLOW BASED (4% N/A 34792 1576 1344 1383 BIORETENTION 33216 33216 METHOD) BIORETENTION ASPHALT PAVEMENT N/A FLOW BASED (4% 11764 566 11198 11198 453 574 BIORETENTION METHOD) NO TREATMENT ASPHALT PAVEMENT N/A N/A N/A N/A N/A N/A 51002 2933 48069 N/A BIORETENTION CONCRETE/ASPHALT FLOW BASED (4% 11143 11143 445 BIORETENTION

518

METHOD)

11143

PAVEMENT

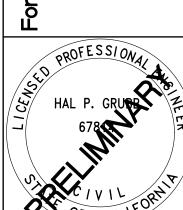
LEGEND

	, , , , , , , , , , , , , , , , , , , ,
4	PROPOSED CONCRETE
	SLURRY SEAL
	PROPOSED CURB
	SAWCUT LINE
	PROPOSED PVC (STORM)
	PROPOSED CANOPY DRIF
	PROPOSED PERFORATED
	PROPOSED INLET
•	PROPOSED CLEANOUT
⊸ ∠_	FLOW PATH
235.00	PROPOSED SPOT GRADE
1.0%_	PROPOSED GRADING SLC
M.E.	MATCH EXISTING
	EXISTING ASPHALT EXISTING CONCRETE
	EXISTING CANOPY DRIPLIN
	EXISTING EASEMENT
	EXISTING EDGE OF PAVE
SD	EXISTING STORM DRAIN
W	EXISTING WATER LINE
——————————————————————————————————————	EXISTING UNDERGROUND TELEPHONE LINE EXISTING UNDERGROUND POWER
	EXISTING STORM DRAIN (BASIN
0	EXISTING STORM CLEANO
× 63.38	EXISTING SPOT ELEVATION

ALTERNATIVE COMPLIANCE NARRATIVE

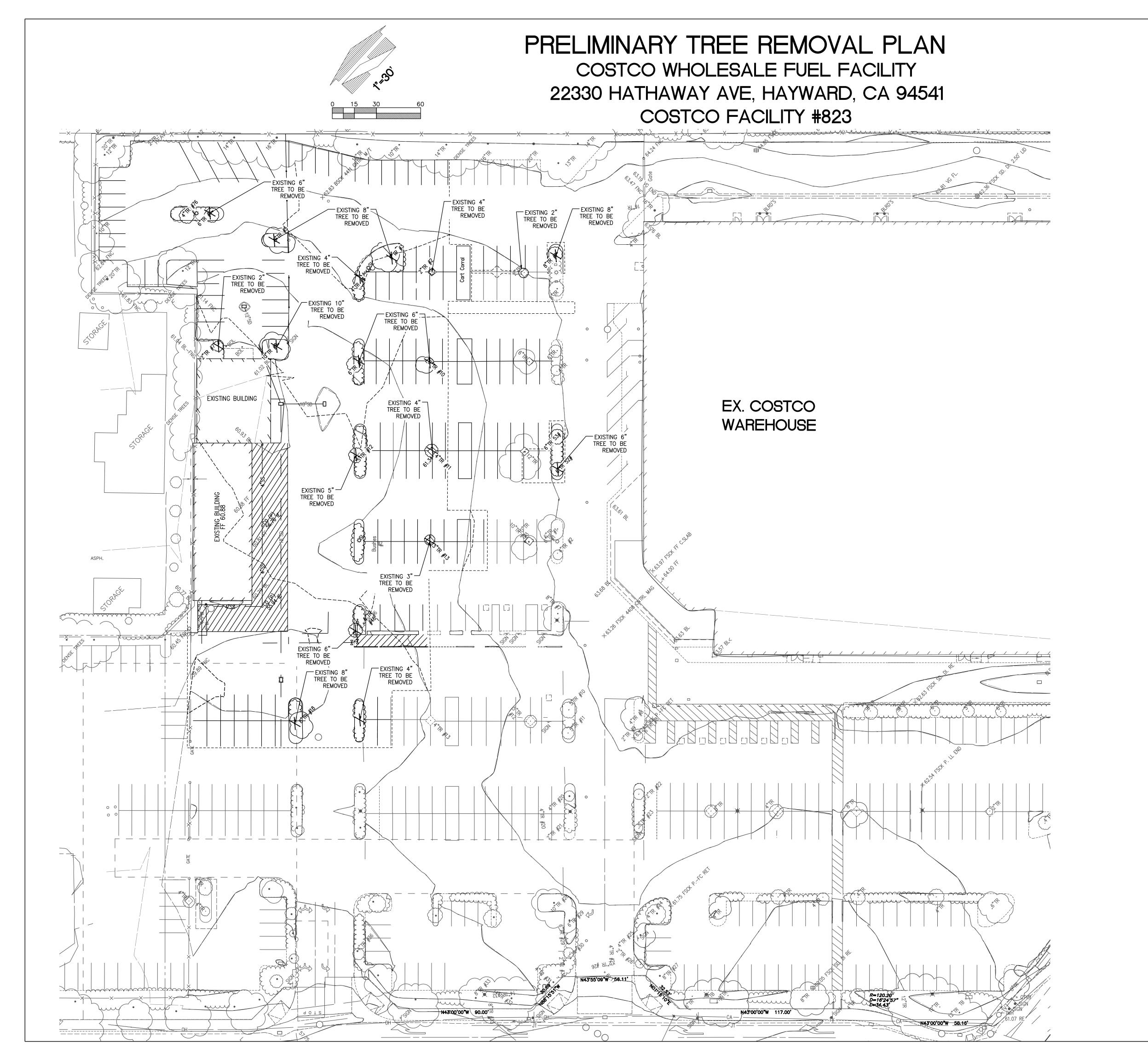
TREATMENT OF THE ENTIRE PROJECT AREA IS NOT FEASIBLE. BECAUSE THE SITE IS ALREADY DEVELOPED, TREATING THE ENTIRE PROJECT AREA WOULD REQUIRE RE-GRADING THAT WOULD SIGNIFICANTLY INCREASE THE LIMITS OF DISTURBANCE. IN ADDITION, SOME AREAS OF THE PROJECT, SUCH AS THE AREA UNDER THE FUEL CANOPY, ARE HYDRAULICALLY ISOLATED BECAUSE OF INCREASED RISK FOR POLLUTANT CONTAMINATION AND CANNOT BE ROUTED THROUGH BIORETENTION.

IN ORDER TO TREAT THE REQUIRED SQUARE FOOTAGE WITH LID BMPs, THE PROJECT PROPOSES TO TREAT AN EQUIVALENT AREA. MUCH OF DMA #2 DOES NOT FALL WITHIN THE PROJECT SITE, BUT WILL BE TREATED WITH BIORETENTION IN THE PROPOSED CONDITION. WE BELIEVE THIS WOULD BRING THE IMPROVEMENTS INTO COMPLIANCE UNDER THE OFFSITE EQUIVALENT TREATMENT PROVISION DESCRIBED IN CHAPTER 9 OF THE 2016 ALAMEDA TGD.



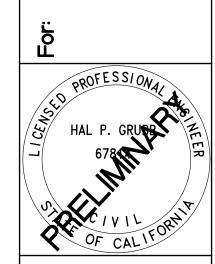


6636



LEGEND

EXISTING ASPHALT EXISTING CONCRETE EXISTING CURB EXISTING CANOPY DRIPLINE EXISTING EDGE OF PAVEMENT EXISTING UNDERGROUND EXISTING UNDERGROUND TELEPHONE LINE EXISTING UNDERGROUND EXISTING TREE TO BE REMOVED





UTILITY CONFLICT NOTE:

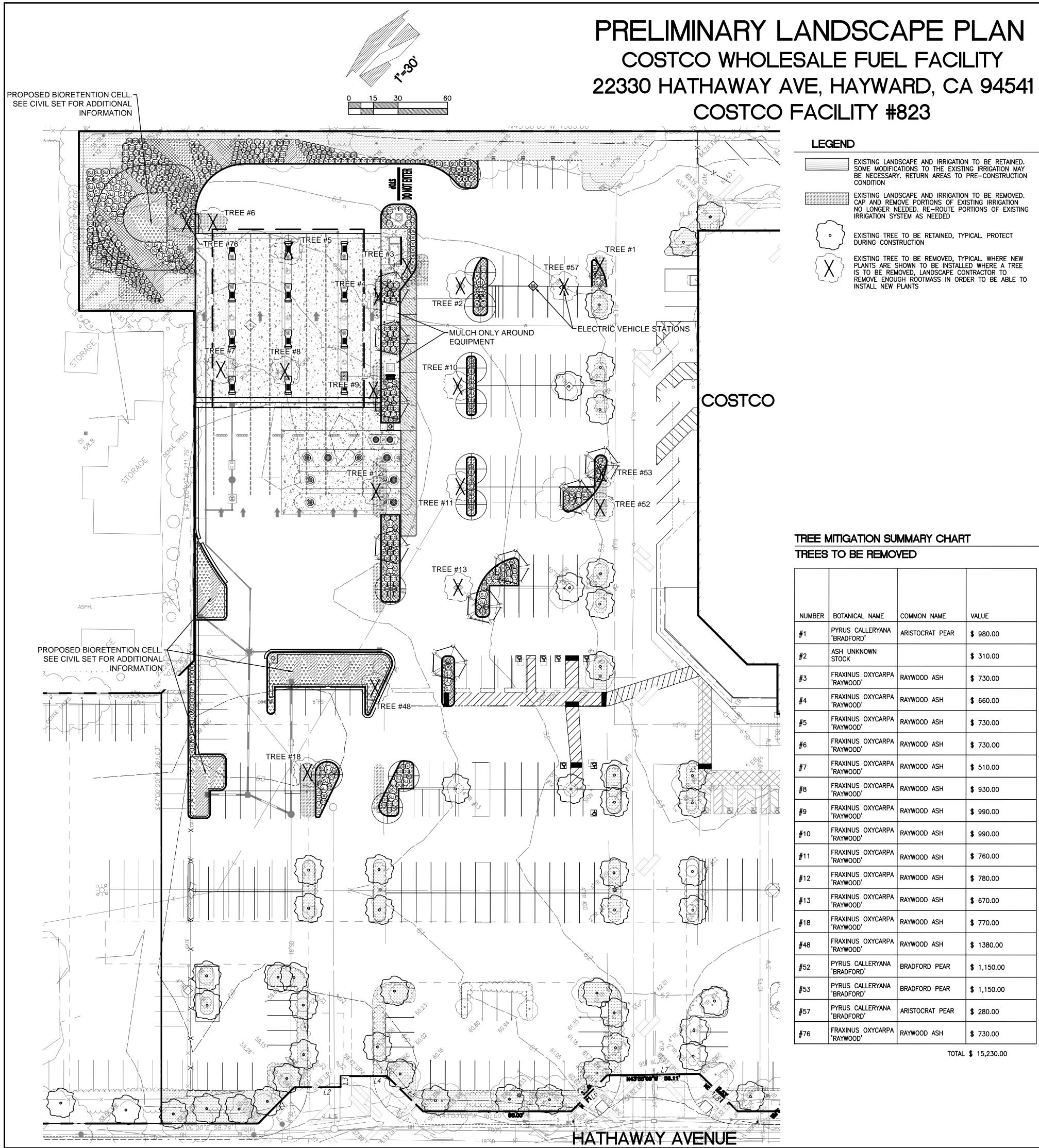
ENGINEERS (425-251-6222).

CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE @ 1-800-227-2600 AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH

POTENTIAL UTILITY CONFLICT. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING AND NEW UTILITIES PRIOR TO CONSTRUCTION. SEE <u>UTILITY CONFLICT NOTE</u>. THE EXISTING WATER, STORM, AND SANITARY SEWER SERVICE SHOWN IS APPROXIMATE, BASED ON FIELD SURVEYS AND "AS-BUILT" RECORDS. THE GENERAL CONTRACTOR SHALL "POTHOLE" THE EXISTING UTILITIES TO VERIFY THE

DIAMETER AND LOCATION (INCL. ELEVATIONS) PRIOR TO CONSTRUCTION. ANY DISCREPANCIES IN THE LOCATION OF THE EXISTING PIPE OR INCOMPATIBILITY OF THE DESIGN SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNERS REPRESENTATIVE, AND BARGHAUSEN CONSULTING



LANDSCAPE ARCHITECT SIGNATURE and DATE

'I HAVE COMPLIED WITH THE CRITERIA OF THE CITY OF HAYWARD BAY-FRIENDLY WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE AND IRRIGATION DESIGN PLAN'

EXISTING LANDSCAPE AND IRRIGATION TO BE RETAINED. SOME MODIFICATIONS TO THE EXISTING IRRIGATION MAY BE NECESSARY. RETURN AREAS TO PRE—CONSTRUCTION CONDITION EXISTING LANDSCAPE AND IRRIGATION TO BE REMOVED.
CAP AND REMOVE PORTIONS OF EXISTING IRRIGATION
NO LONGER NEEDED. RE—ROUTE PORTIONS OF EXISTING
IRRIGATION SYSTEM AS NEEDED

EXISTING TREE TO BE RETAINED, TYPICAL. PROTECT DURING CONSTRUCTION

EXISTING TREE TO BE REMOVED, TYPICAL. WHERE NEW PLANTS ARE SHOWN TO BE INSTALLED WHERE A TREE IS TO BE REMOVED, LANDSCAPE CONTRACTOR TO REMOVE ENOUGH ROOTMASS IN ORDER TO BE ABLE TO INSTALL NEW PLANTS

SYMBOL	BOTANICAL/COMMON NAMES	SIZE	SPACING	QNT.	WUCOLS IV ZONE 1	/ REMARKS	HT. AT TIME OF INSTALL	MATURE HT. & WIDTH
	TREES:							
	PISTACIA CHINENSIS / CHINESE PISTACHE	36" BOX	AS SHOWN	10	LOW	STAKE & GUY ONE GROWING SEASON; NURSERY GROWN, BRANCHED AT 5'	10'-12' HT.	30'-35' HT. x 25'-35' WIDTH
	OLEA EUROPAEA 'WILSONI' / FRUITLESS OLIVE TREE	36" BOX	AS SHOWN	11	LOW	STAKE & GUY ONE GROWING SEASON; NURSERY GROWN,	12'-13' HT.	25'-30' HT. x 25'-30' WIDTH
	NOTE: FOR DECIDUOUS TREES, AT TI BRANCHING HEIGHT TO START AT AB GRADE AND CANOPY TO START AT 7	DUT 5' AE	OVE FINISH	-		BRANCHED AT 5'		
	SHRUBS:							
(DG)	MUHLENBERGIA RIGENS / DEER GRASS	1 GAL	AS SHOWN I	269 I	LOW	FULL AND BUSHY		4' HT. X 4' W
(Dig)	DICLIPTERA SUBERECTA / HUMMINGBIRD PLANT	1 GAL	AS SHOWN	225	LOW	FULL AND BUSHY		2' HT. X 3' W
SJ	STRELITZIA JUNCEA / NARROW-LEAF BIRD OF PARADISE	2 GAL	AS SHOWN	82	LOW	FULL AND BUSHY		4' HT. X. 5' W
(KP)	ANIGOZANTHOS 'AMBER VELVET'/ AMBER VALVET KANGAROO PAW	1 GAL	AS SHOWN	231	LOW	FULL AND BUSHY		3' HT. X 3' W
	GROUNDCOVERS:							
	DYMONDIA MARGARETAE / DYMONDIA	1 GAL	18" O.C.	AS REQ'D	LOW	HOLD BACK 16" FROM BORDERS, TREES, AND SHRUBS	3	
	APTENIA 'RED APPLE' / BABY SUN ROSE	1 GAL	18" O.C.	AS REQ'D	LOW	HOLD BACK 16" FROM BORDERS, TREES, AND SHRUBS	s	
	SENECIO SERPENS/ BLUE CHALK STICK	1 GAL	18" O.C.	AS REQ'D	LOW	HOLD BACK 16" FROM BORDERS, TREES, AND SHRUBS	S	
	CHONDROPETALUM TECTORUM/ DWARF CAPE RUSH	1 GAL	18" O.C.	AS REQ'D	LOW	HOLD BACK 16" FROM BORDERS, TREES, AND SHRUBS	3	
\(\frac{1}{2}\) \(\frac{1}\) \(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(1	CAREX BARBARAE/ BASKET SEDGE	1 GAL	18" O.C.	AS REQ'D	LOW	HOLD BACK 16" FROM BORDERS, TREES, AND SHRUBS		

TREE MITIGATION SUMMARY CHART

TREES TO BE REMOVED

NUMBER	BOTANICAL NAME	COMMON NAME	VALUE
#1	PYRUS CALLERYANA 'BRADFORD'	ARISTOCRAT PEAR	\$ 980.00
#2	ASH UNKNOWN STOCK		\$ 310.00
#3	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 730.00
#4	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 660.00
# 5	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 730.00
# 6	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 730.00
# 7	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 510.00
# 8	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 930.00
# 9	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 990.00
#10	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 990.00
#11	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 760.00
# 12	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 780.00
#13	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 670.00
# 18	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 770.00
#48	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	\$ 1380.00
# 52	PYRUS CALLERYANA 'BRADFORD'	BRADFORD PEAR	\$ 1,150.00

ARISTOCRAT PEAR

\$ 730.00

TOTAL \$ 15,230.00

TREES TO BE PLANTED

	<u> </u>	1	
BOTANICAL NAME	COMMON NAME	SIZE	VALUE
PISTACIA CHINENSIS	CHINESE PISTACHE	36" BOX	\$ 742.00
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PISTACIA CHINENSIS	CHINESE PISTACHE	36" BOX	\$ 742.00
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TOTAL \$ 15,380.00





COSTCO WHOLESALE FUEL FACILITY 22330 HATHAWAY AVE, HAYWARD, CA 94541 COSTCO FACILITY #823

LANDSCAPE PLANTING NOTES AND MATERIALS

FURNISH ALL MATERIALS, LABOR, EQUIPMENT AND RELATED ITEMS NECESSARY TO ACCOMPLISH TOPSOIL, TREATMENT AND PREPARATION OF SOIL, FINISH GRADING, PLACEMENT OF SPECIFIED PLANT MATERIALS. FERTILIZER, STAKING, MULCH, CLEAN-UP, DEBRIS REMOVAL, AND 90-DAY MAINTENANCE.

LANDSCAPE CONTRACTOR TO BE SKILLED AND KNOWLEDGEABLE IN THE FIELD OF WORK AND HAVE A MINIMUM OF FIVE (5) YEAR'S EXPERIENCE INSTALLING SIMILAR WORK. CONTRACTOR TO BE LICENSED TO PERFORM THE WORK SPECIFIED WITHIN THE PRESIDING JURISDICTION.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE SITE AND REPORT ANY DISCREPANCIES TO THE OWNER OR THE OWNER'S REPRESENTATIVES. ALL PLANT MATERIAL AND FINISH GRADES ARE SUBJECT TO APPROVAL BY THE OWNER.

SAVE AND PROTECT ALL EXISTING PLANTINGS SHOWN TO REMAIN. DO NOT PLANT UNTIL OTHER CONSTRUCTION OPERATIONS WHICH CONFLICT HAVE BEEN COMPLETED. IF AN IRRIGATION SYSTEM IS TO BE INSTALLED DO NOT PLANT UNTIL THE SYSTEM HAS BEEN INSTALLED, TESTED, AND APPROVED BY THE OWNER. HANDLE PLANTS WITH CARE - DO NOT DAMAGE OR BREAK ROOT SYSTEM, BARK, OR BRANCHES. REPAIR AND/OR REPLACE ITEMS DAMAGED AS A RESULT OF WORK, OR WORK NOT IN COMPLIANCE WITH PLANS AND SPECIFICATIONS, AS DIRECTED BY OWNER AT NO ADDITIONAL COST TO THE OWNER.

DURING THE COURSE OF WORK. REPAIR ALL EXISTING PLANTING AREAS BY PRUNING DEAD

REPAIR OF EXISTING PLANTINGS:

GROWTH, RE-ESTABLISHING FINISH GRADE AND RE-MULCHING TO SPECIFIED DEPTH.

REPAIR OF IRRIGATION SYSTEM:

DURING THE COURSE OF WORK, REPAIR ANY DAMAGE TO THE IRRIGATION SYSTEM TO MATCH CONDITIONS PRIOR

GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE JOB BY OWNER.

90-DAY MAINTENANCE:

CONTRACTOR TO PROVIDE OWNER WITH A SCOPE OF WORK AT TIME OF INITIAL PROJECT BID TO PROVIDE LANDSCAPE AND IRRIGATION MAINTENANCE FOR 90 DAYS FOLLOWING COMPLETION OF PROJECT (ACCEPTANCE) OF FACILITY BY OWNER. WORK TO INCLUDE MAINTENANCE AS DESCRIBED BELOW, IN PLANTING AND IRRIGATION MAINTENANCE.

MATERIALS:

PLANT MATERIALS TO BE GRADE NO. 1, SIZED IN ACCORDANCE WITH (AAN) AMERICAN STANDARDS FOR NURSERY STOCK, CURRENT EDITION. PRUNE PLANTS RECEIVED FROM THE NURSERY ONLY UPON AUTHORIZATION BY THE LANDSCAPE ARCHITECT. "B & B" INDICATES BALLED AND BURLAPPED; "CONT." INDICATES CONTAINER; "BR" INDICATES BARE ROOT; "GAL"

- A) SPECIFIED PLANT CANOPY SIZE OR CALIPER IS THE MINIMUM ACCEPTABLE CONTAINER OR BALL SIZE AND ESTABLISHES MINIMUM PLANT CONDITION TO BE PROVIDED.
- B) QUALITY: PLANT MATERIAL TO COMPLY WITH STATE AND FEDERAL LAWS FOR DISEASE INSPECTION, PLANTS TO BE FULLY LIVE, VIGOROUS, WELL FORMED, WITH WELL DEVELOPED FIBROUS ROOT SYSTEMS. ROOT BALLS OF PLANTS TO BE SOLID AND FIRMLY HELD TOGETHER, SECURELY CONTAINED AND PROTECTED FROM INJURY AND DESICCATION. PLANTS DETERMINED BY LANDSCAPE ARCHITECT TO HAVE BEEN DAMAGED; HAVE DEFORMITIES OF STEM, BRANCHES, OR ROOTS; LACK SYMMETRY, HAVE MULTIPLE LEADERS OR "Y" CROTCHES LESS THAN 30 DEGREES IN TREES, OR DO NOT MEET SIZE OR ANSI STANDARDS WILL BE REJECTED. PLANT MATERIAL TO BE FROM A SINGLE NURSERY SOURCE FOR EACH SPECIFIED SPECIES/HYBRID. NURSERY SOURCES TO BE THOSE LOCATED IN THE SAME REGION AS THE JOB SITE.
- C) SUBSTITUTION: NO SUBSTITUTION OF PLANT MATERIAL, SPECIES OR VARIETY, WILL BE PERMITTED UNLESS WRITTEN EVIDENCE IS SUBMITTED TO THE OWNER FROM TWO QUALIFIED PLANT BROKERAGE OFFICES. SUBSTITUTIONS WHICH ARE PERMITTED TO BE IN WRITING FROM THE OWNER AND LANDSCAPE ARCHITECT. THE SPECIFIED SIZE, SPECIES AND NEAREST VARIETY, AS APPROVED, TO BE FURNISHED. SUBSTITUTIONS MAY REQUIRE SUBMITTAL TO REVISED LANDSCAPE PLAN TO CITY FOR APPROVAL.

2x THE ROOTBALL DIAMETER

CUT AND REMOVE BURLAP FROM ROOT BALL

SHRUB PLANTING DETAIL

NOT TO SCALE

APPLY ADDITIONAL 4 OZ. 8-32-16 FERTILIZER INTO TOP 2" OF PLANTING MIX.

FROM ROOTBALL. ROUGHEN ALL SURFACES OF PIT.

PLANT SHRUB HIGH ENOUGH TO ALLOW POSITIVE DRAINAGE AWAY

FOR ALL NEW LANDSCAPE BEDS. INCORPORATE COMPOST AT A RATE OF AT LEAST FOUR CUBIC YARDS PER 1,000 SQUARE FEET TO A DEPTH OF SIX INCHES INTO LANDSCAPE AREA (UNLESS CONTRA-INDICATED BY A

SOIL AMENDMENTS AND ANY ADDITIONAL SOIL SUPPLEMENTS AND PROCEDURES SHALL BE DONE IN ACCORDANCE WITH A SOIL TEXT. LANDSCAPE CONTRACTOR TO PROCURE SOIL TEST AND PROVIDE RESULTS TO LANDSCAPE

SHRUB - PRUNE AS DIRECTED

BY LANDSCAPE ARCHITECT

HOLD MULCH FROM STEM

4" SAUCER FOR WATERING

FERTILIZER, AND PEAT MOSS

BURLAP ON B&B MATERIAL

DUST ROOT BALL WITH

ROOT GROWTH HORMONE

BACKFILL TO BE A MIX OF TOPSOIL.

SCARIFY ROOTBALL ON CONTAINER

MATERIAL. REMOVE TOP 1/3 OF

3" DEEP MULCH LAYER

18/24 INCHES IN PARKING LOT ISLANDS.

- 1. PROVIDE A TOTAL FINISH COURSE OF 4 INCHES OF TOPSOIL FOR LANDSCAPE AREAS AND
- 2. IN ALL LANDSCAPE AREAS, PLACE 2 INCHES (6 INCHES IN PARKING LOT ISLANDS) OF TOPSOIL MIX WITH AMENDMENTS OVER THE PREPARED SUB-GRADE AND THOROUGHLY ROTOTILL WITH MULTIPLE PASSES INTO THE TOP 6 INCHES OF SUB-GRADE FOR A TOTAL DEPTH OF 8 INCHES IN LANDSCAPE AREAS (12 INCHES IN PARKING LOT ISLANDS). PLACE AN ADDITIONAL 2 INCH LIFT OF TOPSOIL, IN ALL LANDSCAPE AREAS AND A MINIMUM 12 INCH LIFT IN ALL PARKING LOT ISLANDS, FOR THE FINAL TOPSOIL DEPTH OF 4 INCHES IN LANDSCAPE AREAS AND 18/24 INCHES IN PARKING LOT ISLANDS.
- 3. PLACE ADDITIONAL TOPSOIL AND SOIL MIX AS REQUIRED TO MEET FINISH ELEVATIONS.

MULCH (TOPDRESSING):

ORGANIC RECYCLED CHIP WOOD, DARK BROWN, SIZE SHALL NOT EXCEED 1-1/2 INCH.

1-INCH WIDE POLYETHYLENE CHAIN LOCK TYPE TIES; OR, 3/8" DIAMETER RUBBER. NO WIRE.

SEE CITY OF HAYWARD STANDARD DETAIL THIS SET.

HERBICIDE IS NOT RECOMMENDED FOR THE FIRST YEAR AFTER INSTALLATION.

ANTI-DESICCANT:

"WILT-PROOF," 48 HOURS PRIOR TO SHIPMENT TO SITE FROM JUNE 1 THROUGH SEPTEMBER. THOROUGHLY ROOT WATER PLANTS PRIOR TO DELIVERY. PLANT MATERIAL DELIVERED TO SITE TO BE KEPT CONTINUALLY MOIST THROUGH INSTALLATION.

EXECUTION:

FINE GRADE AND REMOVE ROCKS AND FOREIGN OBJECTS OVER 2 INCHES DIAMETER FROM TOP SURFACE OF PREPARED LANDSCAPE AREAS. FINISH ELEVATIONS TO BE DEFINED AS 3 INCHES BELOW CURBS, WALKS AND/OR OTHER ADJACENT HARDSCAPE FOR ALL PLANTING BED AREAS AND 1-INCH BELOW CURBS, WALKS AND/OR OTHER ADJACENT HARDSCAPE FOR ALL LAWN AREAS. FINISH GRADE REFER TO GRADES PRIOR TO INSTALLATION OF MULCH OR LAWN.

ALL FINISH GRADES TO BE SMOOTH EVEN GRADES, LIGHTLY COMPACTED, AS SHOWN ON THE PLAN AND DETAILED. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND STRUCTURES. SITE CIVIL DRAWINGS IDENTIFY FINAL ELEVATIONS.

ARRANGE TREES AND SHRUBS ON SITE IN PROPOSED LOCATIONS PER DRAWINGS. EXCAVATE PIT, PLANT AND STAKE OR GUY, AS CALLED OUT AND DETAILED. ALL TREES, SHRUBS, AND SUPPORTS TO STAND VERTICAL. BACKFILL SHALL BE PIT SPOILS. SETTLE BACKFILL USING WATER ONLY. NO MECHANICAL COMPACTION.

EXCAVATE PITS TO A MINIMUM OF 3 INCHES BELOW, AND TWICE THE ROOT BALL DIAMETER. WATER THOROUGHLY AND TAKE CARE TO ENSURE THAT ROOT CROWN IS AT PROPER GRADE, AS DETAILED.

MULCH ALL LANDSCAPE AREAS NOT COVERED BY LAWN AND/OR SEED. APPLY SUFFICIENT QUANTITY TO PROVIDE A 3-INCH DEPTH.

FIELD ADJUST PLANT LOCATIONS FOR 8-FOOT SEPARATION OF TREES/SHRUBS AND 2-FOOT SEPARATION FOR GROUNDCOVER FROM FIRE HYDRANTS AND UTILITY VAULTS.

CONTRACTOR TO MAINTAIN PLANTINGS THROUGH COMPLETED INSTALLATION, AND UNTIL ACCEPTANCE OF LANDSCAPE INSTALLATION. PLANTING MAINTENANCE TO INCLUDE WATERING, WEEDING, CULTIVATING, TIGHTENING AND REPAIRING OF TREE GUYS, RESETTING PLANTS TO PROPER GRADES OR POSITION, RE-ESTABLISHING SETTLED GRADES; AND MOWING LAWNS WEEKLY AFTER LAWN ESTABLISHMENT. HERBICIDE IS NOT RECOMMENDED FOR ONE YEAR FOLLOWING LANDSCAPE INSTALLATION. INCLUDED IS REPLACEMENT OF DEAD PLANTS AND PLANTS SHOWING LOSS OF 40 PERCENT OR MORE OF CANOPY.

TOPSOIL SETTLED

(COMPACTED CONDITION)

IRRIGATION MAINTENANCE:

OVER EXCAVATE PARKING LOT PLANTERS

OVER ALL AGRICULTURAL SOIL DEPTH - OF 3 FEET

COARSE TRANSITION FROM TOPSOIL-

GRADING IN PARKING LOT PLANTER DETAIL

TO SUBSOIL

BERM HEIGHT 6" TYP.

REMOVE EXCESS GRAVEL

NOT TO SCALE

MIN. OR AS NOTED

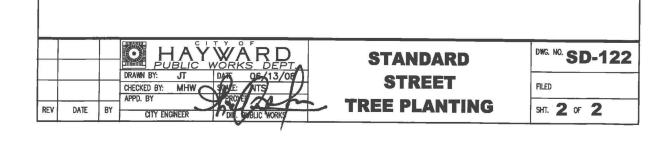
TO LOOSEN COMPACTED SUBBASE

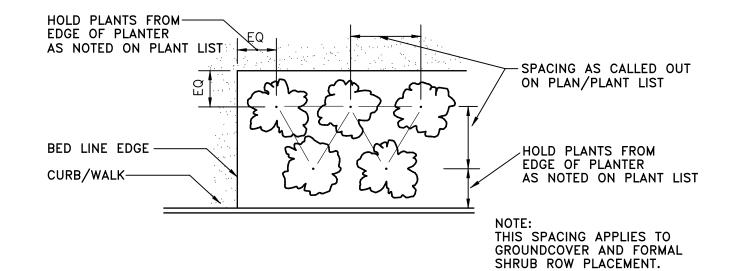
THE IRRIGATION SYSTEM TO BE MAINTAINED INCLUDING ADJUSTMENTS FOR BALANCED WATER DISTRIBUTION AND PRECIPITATION. FAILED OR MALFUNCTIONING IRRIGATION EQUIPMENT SHALL BE REPLACED AND/OR CORRECTED. PLANTING AND IRRIGATION MAINTENANCE TO INCLUDE THOSE OPERATIONS NÉCESSARY TO THE PROPER GROWTH AND SURVIVAL OF ALL PLANT MATERIALS. CONTRACTOR TO PROVIDE THIS WORK IN ADDITION TO SPECIFIC WARRANTY/GUARANTEES.

-Four flexible belt of rubber hose tree ties Cross ties over before securing onto stake with galvanized screws PLAN VIEW Set lower tie 1/2 distance between top tie and finished grade—— Top of stake to be 2" below the main branching Height of stakes as structure of the tree and required to hold tree shall not extend into the upright & straight A secured to stakes with galvanized screws Two 3" diameter pressure treated Set rootball 2" lodgepole pine stakes. Remov above finished ursery stakes before staking. 2 tree bubblers per--Minimum 3" organic recycled chipped wood ∕4" water basin Organic fertilizers native soil and so per Soils Lab. amendment as necessary. Soil amendment shall be organic compost or as perforated drain pipes with directed by Soils slotted cover, min. 30" deep. Fill in and around Set stakes 12" minimum into undisturbed soil. carify sides and bottom of plan hole. Lightly score sides and Excavate plant pit a minimum of bottom of root ball just prior to 2x diameter of root ball TREE STAKING 15 GALLON OR **STANDARD** SD-122 STREET

STREET TREE PLANTING SPECIFICATIONS:

- Tree shall be healthy, disease and insect-free, well rooted, and properly trained with a straight trunk that can stand upright without support. Tree shall exhibit a central leader, or a main branch that can be trained as a central leader. Branches shall be well-developed and shall be evenly and radially distributed around the trunk. Root ball shall not exhibit
- 2. Tree shall comply with federal and state laws requiring inspection for plant diseases and pest infestation. Clearance from the county agricultural commissioner, as required by law, shall be obtained before planting trees delivered from outside the county.
- 3. Prior to planting tree, determine the location of existing or future underground utilities. Locate tree a minimum of 5 feet from lateral service lines and driveways. Locate tree a minimum of 15 feet from a light pole, and a minimum of 30 feet from the face of a traffic signal, or as otherwise
- 4. Tree pit shall be tested for proper drainage prior to planting tree. Fill pit with water; if water remains after a 24-hour period, auger three 4"-diameter by 3-foot deep holes at the bottom of the tree pit. Backfill with drain rock.
- Set tree in an upright and plumb position. As much as possible, tree shall be positioned such that dominant branches are parallel to the roadway and are oriented away from potential conflicts.
- 6. If required by the City, a pressure—compensating bubbler, or drip emitters, shall be provided to each tree.
- Depending on the planter strip width, or the tree well size and the tree species being planted, a 24" deep root-barrier may be required by the City to be placed between the root-ball and the curb and/or sidewalk. Length of strip barrier or size of the box barrier will be specified by the City.
- 8. Stakes are to be removed when the tree diameter meets or exceeds the diameter of the stake.



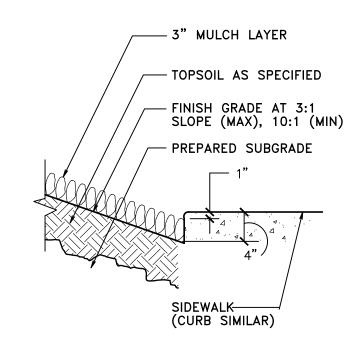


TREE PLANTING

SHT. 1 OF 2

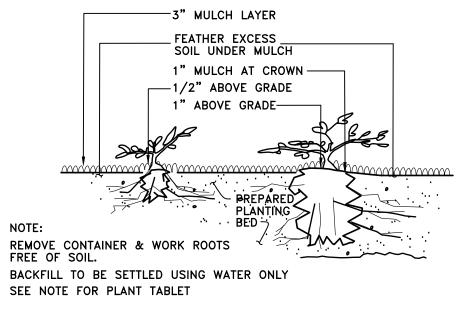
PLANT MATERIAL SPACING DETAIL

NOT TO SCALE



PLANTER SECTION DETAIL

NOT TO SCALE

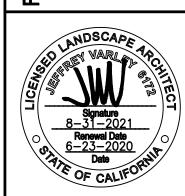


<u>LESS THAN 1 GAL.</u> (PLANTED BEFORE MULCH)

1 GAL. CONTAINER and LARGER (PLANTED BEFORE MULCH

GROUNDCOVER PLANTING DETAIL

NOT TO SCALE





/RY

PRELIMINARY LANDSCAPE SOILS REPORT

COSTCO WHOLESALE FUEL FACILITY 22330 HATHAWAY AVE, HAYWARD, CA 94541 COSTCO FACILITY #823

San Jose Office November 13, 2018 Report 18-306-0100

Evergreen Landcare Inc. P.O. Box 1929 Fremont, CA 94538

Attn: Mark Oliver RE: Costco, Hayward

Background

One sample was processed on November 2, 2018 identified as site soil from a depth of 12 inches from areas that are scheduled for new landscaping. Conventional and organic fertilizer and amendment recommendations were requested. The samples were analyzed for horticultural suitability, fertility, and physical characteristics. The results of the analyses are attached.

Analytical Results and Comments

The reaction of the sample is slightly alkaline at a pH of 7.2 with medium qualitative lime present. This is within the range preferred for most plants. Salinity (ECe), sodium and boron are safely low. The sodium adsorption ratio (SAR) indicates that sodium is adequately balanced by soluble calcium and magnesium; this balance is important for soil structure quality, which relates to the rate at which water infiltrates the

According to the USDA Soil Classification system, the texture of the less than 2mm fraction of the soil is classified as sandy loam. Organic matter content is moderate at 4.0% dry weight. Based on this information the estimated infiltration rate is a moderate 0.29 inch per hour. Infiltration rates may vary due to differences in compaction across the site.

In terms of soil fertility, nitrogen and potassium are low. All of the other major nutrients are sufficient for proper plant nutrition at this time. Of the micronutrients; copper and zinc are sufficient while manganese and iron are fair.

Recommendations

Incorporation of nitrogen and potassium fertilizers is recommended at the time of planting. Incorporation of a nitrogen stabilized amendment or composted greenwaste product is also recommended in order to help improve soil nutrient holding capacity and porosity. If a composted greenwaste amendment is chosen, that would provide additional phosphorus and potassium as well as micronutrients, product depending.

The primary symptom of manganese and iron deficiencies is a general yellowing of leaves with veins remaining green. In severe cases, leaves may become pale yellow or whitish, but veins remain green. Brown spots may develop between veins and leaf margins may turn brown. Manganese deficiency symptoms appear first on younger leaves. Iron deficiency shows first and more severely on the newer growth at branch tips. If these symptoms are present after plant installation they may be treated with an application of a chelated micronutrient product at the manufacturer's recommended rate. Incorporation of a composted greenwaste amendment would also provide additional micronutrients and may be sufficient to negate any deficiency, product depending.

> 1101 S Winchester Blvd., Ste. G-173 San Jose, CA 95128 (408) 727-0330 **(408)** 727-5125 fax www.waypointanalytical.com

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To Prepare for Mass Planting:

Drainage of the root zone should be improved by first loosening the top 10 inches of any undisturbed or compacted soil. The following materials should then be evenly spread and thoroughly blended with the top 6 inches of soil to form a homogenous layer:

Amount per 1000 Square Feet Conventional

4 cubic yards Nitrogen Stabilized Organic Amendment* Ammonium Sulfate (21-0-0) Potassium Sulfate (0-0-50)* 9 pounds

OR

Amount per 1000 Square Feet Organic

4 cubic yards Composted Greenwaste Organic Amendment*

6 pounds Blood Meal (12-0-0) 14 pounds Feather Meal (12-0-0) Potassium Sulfate (0-0-50)* 9 pounds

*The rate may change based on the analysis of the chosen organic amendment. This rate is based on 270 lbs. of dry weight of organic matter per cubic yard of amendment. If a composted greenwaste amendment is chosen that provides a substantial amount of potassium, the potassium sulfate should be decreased or omitted accordingly.

For turf areas, the organic amendment should be decreased by half.

To Prepare Backfill For Trees and Shrubs:

- Excavate planting pits at least twice as wide as the diameter of the rootball.
- Soil immediately below the root ball should be left undisturbed to provide support but the sides
- and the bottom around the side should be cultivated to improve porosity.
- The top of the rootball should be at or slightly above final grade.

1 part

 The top 12 inches of backfill around the sides of the rootball of trees and shrubs may consist of the above amended soil or may be prepared as follows:

> 4 parts Site Soil Conventional

Nitrogen Stabilized Organic Amendment*

Amount per Cubic Yard of Backfill Conventional

Ammonium Sulfate (21-0-0) Potassium Sulfate (0-0-50)* 1/2 pound

Site Soil Organic 4 parts

Composted Greenwaste Organic Amendment*

Uniformly blended with:

Uniformly blended with:

Amount per Cubic Yard of Backfill Organic 1/3 pound Blood Meal (12-0-0) Feather Meal (12-0-0) 3/4 pound

1/2 pound Potassium Sulfate (0-0-50)*

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Evergreen Landcare Inc. Report 18-306-0100

- Backfill below 12 inches required for 24 inch box or larger material should not contain the organic amendment, soil sulfur, ammonium sulfate, blood meal or feather meal but should still contain the potassium sulfate at the recommended rate.
- Ideally a weed and turf free zone should be maintained just beyond the diameter of the planting hole. A 2-4 inch deep layer of coarse mulch can be placed around the tree or shrub. Mulch should be kept a minimum 4 inches from the trunk.
- Irrigation of new plantings should take into consideration the differing texture of the rootball substrate and surrounding soil matrix to maintain adequate moisture during this critical period of

Maintenance

For turf areas, new sod should receive a light fertilization 2 weeks after planting with 16-6-8 applied at a rate of 4 pounds per 1000 square feet. For turf from seed this application should be after the first mowing. The area may then be maintained with primarily a nitrogen program of applying 5 pounds of ammonium sulfate (21-0-0) per 1000 square feet. Treatment should be at 45 to 60 day intervals until the turf becomes well established. Once the turf is well established, the frequency of fertilization should be decreased depending on color and rate of growth desired. In the spring and fall substitute a complete fertilizer such as 15-15-15 to help insure continuing adequate phosphorus and potassium.

Maintenance fertilization for other areas should rely primarily on a nitrogen only program supplemented with a complete fertilizer in the fall and spring. Beginning 45-60 days after planting, ammonium sulfate (21-0-0) should be applied at a rate of 5 pounds per 1000 square feet with reapplication every 45-60 days. Alternatively, slow release Sulfur-coated Urea (43-0-0) may be applied at 6 pounds per 1000 square feet every 90 days. Once plants are performing satisfactorily, the frequency of fertilization may be decreased depending on color and rate of growth desired. In the winter for a quick greening effect, calcium nitrate (15.5-0-0) may be applied at a 6 pound rate if applicable. Early fall and spring, substitute a complete fertilizer such as 15-15-15 to help insure continuing adequate phosphorus and potassium.

Alternatively, Blood Meal (12-0-0) provides available nitrogen fairly rapidly while materials such as Feather Meal (12-0-0), Soybean or Cotton Seed Meal (7-1-1) are slower to provide available nitrogen, but they extend the length of time they make this contribution. In order to provide a good supply of nitrogen for a 3-4 month time frame a good combination would be 6 pounds Blood Meal and 14 pounds Feather Meal per 1000 square feet. In the fall and spring, substitute a complete organic fertilizer such as 5-5-5 applied at the manufacturer's label rate. Or, nutrient rich composted greenwaste may be spread in a 1 to 2 inch layer, which generally carries enough nutrition to boost complete nutrition though a source of nitrogen might also be added at a half rate to assure adequate nitrogen availability.

If we can be of any further assistance, please feel free to contact us.

Ohochani

Annmarie Lucchesi alucchesi@waypointanalytical.com

Emailed 4 Pages: <u>markoliver@evergreenlandcare.net</u>

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Project : Costco

COMPREHENSIVE SOIL ANALYSIS

Report No: 18-306-0100 Purchase Order Date Recd : 11/02/2018 Date Printed: 11/08/2018 Page : 1 of 1

		Half Sat	pH	ECe	NO ₃ -N	NH ₄ -N ppm	PO ₄ -P		Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic	Lab No.		
Sample Description - Sample ID				TEC	Qual Lime	dS/m					Sufficiency F	actors	1				% dry wt.	Lab No.
Site Soil 6-12"				27	7.2		2	17	25	94	3332	360	2.8	4.5	9	36		26919
				196	Medium	0.7		.4	0.8	0.4	1.0	0.8	1.1	0.5	0.4	0.4	4.0	26919
	8	Saturation	Extract Val	ues			Gravel %		Per	rcent of S	ample Passi	ng 2 mm	Screen					
Ca meq/L	Mg meq/L	Na meq/L	K meq/L		O ₄ S.	AR Cos				Coarse 0.5 - 1	and Med. to Ve 0.05 -		Silt .00205	Clay 0002	USDA Soil Classification		sification	Lab No.
5.2	1.7	1.4	0.3	0.07 2	.2 0	.8 9	2 14.7	9.6	3	10.4	36.7		25.1	25.1 18.1 Gravelly Sandy Loam			/ Loam	26919

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K),

Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat, ext. method for salinity (ECe as dS/m),Boron (B), Sulfate(SO 4), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on Ignition.

MINARY L 22330

8



6636

PRELIMINARY IRRIGATION PLAN COSTCO WHOLESALE FUEL FACILITY 22330 HATHAWAY AVE, HAYWARD, CA 94541 COSTCO FACILITY #823

I TREES LOCATED WÎTHIN HYDROZONE #5%

HATHAWAY AVENUE

ARE TO BE LOCATED ON HYDROZONE #11

∼BOUNDARY FOR HYDROZONE, TYPICAL

HYDROZONE #1

2.5' WIDE ENCROACHMENT EASEMENT INST. NO. 93-195677

EXISTING IRRIGATION TO REMAIN.

REPAIR ANY AREAS THAT ARE IMPACTED

HYDROZONE #7 ARE TO BE LOCATED ON

HYDROZONE #8

HYDROZONE,#4

EXISTING ABOVE GROUND BACKFLOW

ESTIMATED 100 PSI STATIC WATER PRESSURE

AT POINT OF CONNECTION. LANDSCAPE

CONTRACTOR TO VERIFY PRIOR TO WORK.

LANDSCAPE ARCHITECT SIGNATURE and DATE

'I HAVE COMPLIED WITH THE CRITERIA OF THE CITY OF HAYWARD BAY-FRIENDLY WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT

MAWA - MAXIMUM APPLIED WATER ALLOWANCE

MAWA= ((44.2)(0.62)) (14,246 SQ FT x 0.45) 27.404 x 14,246 = 390,397 GALLONS PER YEAR

ETWU - ESTIMATED TOTAL WATER USE

ETWO ESTIMATED TO THE WATER OSE												
HYDROZONE TABLE	PLANT FACTOR	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF	LANDSCAPE AREA	ETWU						
HYDROZONE #1	0.3	DRIP	0.81	0.45	2,610 SQ FT	32,181 GALLONS PER YEAR						
HYDROZONE #2	0.3	DRIP	0.81	0.45	1,246	1,800						
HYDROZONE #3	0.3	DRIP	0.81	0.45	3,368	41,527						
HYDROZONE #4	0.3	DRIP	0.81	0.45	2,983	36,780						
HYDROZONE #5	0.3	DRIP	0.81	0.45	1,040	12,823						
HYDROZONE #6	0.3	DRIP	0.81	0.45	1,746	21,528						
HYDROZONE #7	0.3	DRIP	0.81	0.45	1,253	15,449						
HYDROZONE #9	0.3	BUBBLER	0.81	0.45	100	1,233						
HYDROZONE #10	0.3	BUBBLER	0.81	0.45	200	2,466						
HYDROZONE #11	0.3	BUBBLER	0.81	0.45	80	986						

TOTAL ESTIMATED WATER USE: 166,773

IDDICATION COLEDINE

EXISTING

COSTCO

FACILITY

→ PROPOSED IRRIGATION SYSTEM

IRRIGATION SYSTEM TO PROVIDE IRRIGATION TO NEW AND REALIGNED

EXISTING IRRIGATION TO REMAIN.

REPAIR ANY AREAS THAT ARE IMPACTED DURING CONSTRUCTION ACTIVITIES

LANDSCAPE BEDS

CONNECTS TO EXISTING IRRIGATION SYSTEM. REMODEL AND EXPAND

-BOUNDARY FOR HYDROZONE, TYPICAL

- 10 TREES LOCATED WITHIN HYDROZONE #6 ARE TO BE LOCATED ON HYDROZONE #10

SYMBOL	DESCRIPTION- TREE WATERIN	IG EMITTERS	MIN. PSI	EMITTER SPACING	EMITTER GPM	MAXIMUM LINEAR FT
2	RAINBIRD RWS-B-C-1401 AT EACH PROPOSED TREE	36" ROOT ZONE WATERING SYSTEM, ONE	20	AS SHOWN ON PLAN	.25	N/A
•	RAINBIRD PC-18 PRESSURE INSTALL ONE OF EACH AT EA RISER (24 GALLONS PER HO	E COMPENSATING THREADED BUBBLER, ACH TREE. INSTALL ON 12" HEIGHT PVC DUR, 0.3 GALLONS PER MINUTE)	20	AS SHOWN ON PLAN	.3	N/A
SYMBOL	DESCRIPTION- SUB-SURFACE	E DRIP TUBING	MIN. PSI	EMITTER SPACING	EMITTER GPH	MAXIMUM LINEAR FT.
	NETAFIM LANDSCAPE TECHLIN TO BE USED WITH NETAFIM					
	WITH GROUNDCOVER, SHRUB ABOVE NOTED DRIPLINE IS D AT 12 INCHES APART AND A	ACE DRIP IRRIGATION FOR PLANTING AREAS S AND TREES DESIGNED WITH .26 GPH EMITTERS SPACED A ROW SPACING OF 12 INCHES. THE IS .42 INCHES OF WATER PER HOUR OF	20	12"	.26	594 @ 45 PSI
NO SYMBOL	NETAFIM: 10-CV-01	DRIP SYSTEM OPERATION/PRESSURE INDICA	ATOR STA	KES, PROVID	E FOR E	ACH ZONE
NO SYMBOL	NETAFIM: TLS6	SOIL STAPLES, AT 5 FEET ON CENTER				
NO SYMBOL	NETAFIM: TLSOV NETAFIM:	DRIPLINE FLUSH VALVE: 1 PER IRRIGATION WITHIN EACH ZONE, INSTALL IN 10" VALVE		OCATE AT <u>L</u>	OWEST EL	<u>EVATION</u>

LVCZ-150-HF CONTROL ZONE KIT: FLOW 11.0 - 35 GPM, IN VALVE BOX LVCZS8010075-HF CONTROL ZONE KIT: FLOW 4.5 - 17.6 GPM, IN VALVE BOX NEW VALVE FOR TREE IRRIGATION, RAINBIRD 100 AND 150 PESB, 1" AND 1-1/2" ELECTRIC REMOTE EXISTING ABOVE-GROUND BACKFLOW PREVENTION DEVICE. LANDSCAPE CONTRACTOR TO VERIFY CONDITION EXISTING WATER METER. LANDSCAPE CONTRACTOR TO VERIFY CONDITION

EXISTING PRESSURE REDUCING VALVE. LANDSCAPE CONTRACTOR TO VERIFY CONDITION — — MAINLINE – MATCH EXISTING TYPE AND SIZE. OTHERWISE USE, SCH 40 PVC (18" COVER); 1-1/2" SIZE MINIMUM

SLEEVE - MATCHING EXISTING TYPE AND SIZE. OTHERWISE, USE CLASS 200 PVC; 24" MINIMUM COVER AT VEHICLE CROSSINGS; TWICE THE SIZE OF INSERT PIPE AND/OR WIRES, 64 SIZE MINIMUM, COORDINATE WITH GENERAL AND PAVING CONTRACTORS

LATERAL - MATCH EXISTING TYPE AND SIZEING. OTHERWISE USE 40 PVC (12" COVER); SIZE PER PLAN, 3/4" SIZE MINIMUM

SCH 40 PIPE SIZING CHART

	PIPE SIZE	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	GPM	(MAX.)
	FLOW								,
١	GPM	1-8	8.1-13	13.1-23	23.1-32	32.1-53	53.1-74		



LANDSCAPE IRRIGATION NOTES

- 1. GENERAL CONTRACTOR AND LANDSCAPE CONTRACTOR TO COORDINATE:
- A. VERIFICATION OF STATIC WATER PRESSURE AT POINT-OF-CONNECTION (P.O.C.) CONTRACTOR SHALL NOTIFY OWNER AND BARGHAUSEN CONSULTING ENGINEERS, INC., OF ANY VARIATION IN STATIC PRESSURE OVER 5 PSI GREATER/LESS THAN DESIGN
- B. INSTALLATION OF SLEEVING.

LANDSCAPE CONTRACTOR TO TEST AVAILABLE WATER PRESSURE AND PROVIDE WRITTEN TEST RESULTS TO LANDSCAPE ARCHITECT PRIOR TO BEGINNING ANY WORK.

- 3. ALL WORK PER LOCAL CODE. INSTALLATION PER MANUFACTURER'S WRITTEN
- 4. ALL VALVES TO BE PLACED IN "CARSON" GRADE LEVEL BOXES WITH BOLT-LOCK LIDS (OR APPROVED EQUIVALENT). SET BOXES 2 INCHES HIGHER THAN FINISH GRADE IN MULCH AREAS AND FLUSH WITH FINISH GRADE IN LAWN AREAS. JUMBO BOX FOR CHECK VALVE, 10" ROUND BOX FOR GATE/QUICK COUPLER/WIRE SPLICES, AND 12" STANDARD FOR CONTROL VALVES. PROVIDE BOX EXTENSIONS AS REQUIRED.
- 5. MAINLINE PIPE TO BE BURIED 18 INCHES AND LATERALS 12 INCHES BELOW FINISH GRADE. NO ROCK OR DEBRIS TO BE BACKFILLED OVER PIPE.
- 6. IRRIGATION DESIGN SHOWN DIAGRAMATICALLY FOR PLAN CLARITY. PRIOR TO INSTALLATION OF DRIP IRRIGATION, CONTRACTOR IS REQUIRED TO CONTACT LOCAL NETAFIM REPRESENTATIVE FOR TRAINING ON THE INSTALLATION AND RUN TIME MANAGEMENT OF DRIP SYSTEM AND NOTIFY LANDSCAPE ARCHITECT THAT FACTORY TRAINING HAS OCCURRED PRIOR TO INSTALLATION. CONTACT CALIFORNIA NETAFIM LANDSCAPE & TURF REPRESENTATIVE (888)638-2346. PLEASE GIVE REPRESENTATIVE A MINIMUM TWO WEEK NOTICE.
- 7. DRIP TUBING SHALL BE INSTALLED FOUR (4) INCHES <u>BELOW FINAL GRADE</u>. CONTRACTOR TO RUN EACH ZONE BEFORE COVERING TUBING, TO VERIFY THAT THERE ARE NO CONNECTION LEAKS. TREES TO BE INSTALLED ON A SEPARATE ZONE. SEE IRRIGATION DETAILS FOR ADDITIONAL INFORMATION
- PROVIDE OWNER WITH TWO (2) SETS "AS-BUILT" DRAWINGS AND (3) SETS OF OPERATOR'S MANUALS UPON COMPLETION. INSTRUCT OWNER AS TO PROPER OPERATION AND WINTERIZATION OF THE IRRIGATION SYSTEM.
- FAMILIARIZE OWNERS FACILITY OPERATOR WITH IRRIGATION SYSTEM FUNCTION. CONTROLLER PROGRAMMING. SYSTEM OPERATION AND MAINTENANCE REQUIREMENTS.
- 10. ALL CONTROL WIRE SPLICES TO BE MADE AT VALVE BOXES WITH WATER TIGHT ELECTRICAL SPLICES, 3M, SCOTT'S LOCK SEAL TACK 3576-78, OR EQUIVALENT.
- 11. EACH VALVE BOX TO CONTAIN A MINIMUM OF TWO (2) SPARE ORANGE CONTROL WIRES FOR JACKETED WIRE. ROUTE SPARE WIRES FROM THE CONTROLLER TO THE LAST VALVE OF EACH MAINLINE BRANCH. COMMON WIRE TO BE WHITE. SINGLE STRAND WIRE TO BE A MINIMUM OF 14 GAUGE.

ALL ELECTRICAL EQUIPMENT TO BE U.L. TESTED AND APPROVED, AND BEAR THE U.L.

- 13. CROSS CONNECTION PROTECTION INSPECTION REQUIRED. THE BACKFLOW DEVICE TO BE TESTED UPON THE ORIGINAL INSTALLATION. THE TESTING TO BE PERFORMED BY A PERSON HOLDING A CURRENT CERTIFICATE AS A BACKFLOW TESTER. THE TEST REPORT TO BE SUBMITTED TO THE LOCAL WATER DISTRICT, OR PURVEYOR, AND OWNER WITH A COPY TO BARGHAUSEN CONSULTING ENGINEERS, INC. CONTRACTOR TO INCLUDE TESTING IN THE SCOPE OF WORK. OWNER IS RESPONSIBLE FOR ANNUAL INSPECTIONS AFTER THE
- 14. CONTRACTOR TO PROVIDE SYSTEM WINTERIZATION/SPRING SERVICE WHEN INSTALLATION HAS BEEN COMPLETED WITHIN 90 DAYS OF NOVEMBER 1 FOR WINTERIZATION. OR MAY 15 FOR SPRING SERVICE. SERVICE TO BE PERFORMED AS NEAR AS PRACTICAL TO THE ABOVE DATES, OR AS FREEZE/PRECIPITATION CONDITIONS DETERMINE SERVICE NEED.

PROPOSED IRRIGATION SHOWN IN THIS DRAWING SET IS TO CONNECT TO AN EXISTING ESTABLISHED IRRIGATION SYSTEM. LANDSCAPE CONTRACTOR IS TO VERIFY THAT EXISTING SYSTEM, SUCH AS IRRIGATION CONTROLLER AND MAINLINE, HAVE ENOUGH CAPACITY TO HANDLE THE ADDITIONAL COMPONENTS. LANDSCAPE CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT IF ANY OF THE EXISTING SYSTEM DOES NOT HAVE THE CAPACITY FOR THE PROPOSED ADDITIONS.

- 16. SUBSTITUTION OF IRRIGATION MATERIAL/EQUIPMENT TO BE MADE ONLY UPON WRITTEN APPROVAL OF LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE.
- 17. ALL ZONES TO PASS A MINIMUM DISTRIBUTION UNIFORMITY WATER AUDIT, AS REQUIRED BY THE STATE OF CALIFORNIA'S WATER EFFICIENT LANDSCAPE ORDINANCE, AS ADOPTED BY THE CITY COUNCIL. AN IRRIGATION ASSOCIATION CERTIFIED WATER AUDIT REPORT TO BE PROVIDED TO THE CITY.

SLEEVE CONDITION TRENCH CONDITION - FINISH GRADE PAVING SECTION -PER CIVIL PLANS -COMPACT BACKFILL -AT 90% DENSITY (TOPSOIL BACKFILL) AT 95% DENSITY (STRUCTURAL) PVC LATERAL 6" OFFSET SLEEVING -ALT. WIRE SLEEVE-- PVC MAINLINE - PIPE BED MATERIAL TO BE CLEAN AND FREE OF ROCK LARGER THAN 1/2"

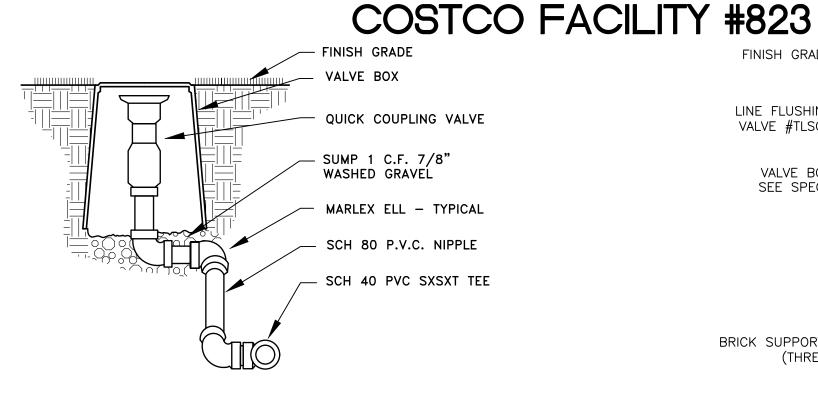
- SLEEVING MATERIAL SHALL BE PVC CLASS 160(SDR-26).
- DIMENSIONS ARE MIN. CLEARANCES.
- ALL IRRIGATION SLEEVING TRENCH BACKFILL MATERIAL SHALL BE CLASS "B" OR BETTER (MAX. OF 10% PASSING NO.40 SCREEN) AND BE COMPACTED TO MIN. 95% OPTIMUM DENSITY PER ASTM D-1557-70 (MODIFIED PROCTOR)

SLEEVE/TRENCHING DETAIL

NOT TO SCALE

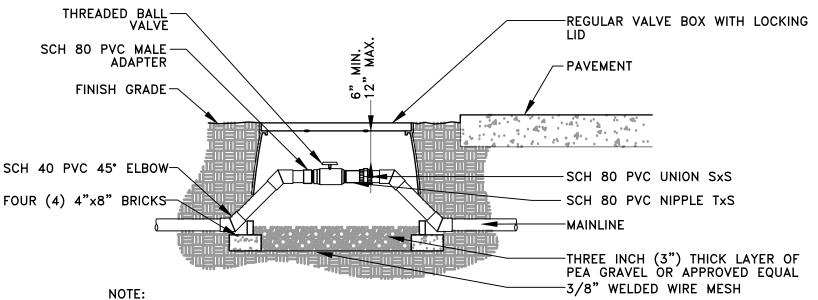
PRELIMINARY IRRIGATION NOTES AND DETAILS

COSTCO WHOLESALE FUEL FACILITY 22330 HATHAWAY AVE, HAYWARD, CA 94541



QUICK COUPLING VALVE DETAIL

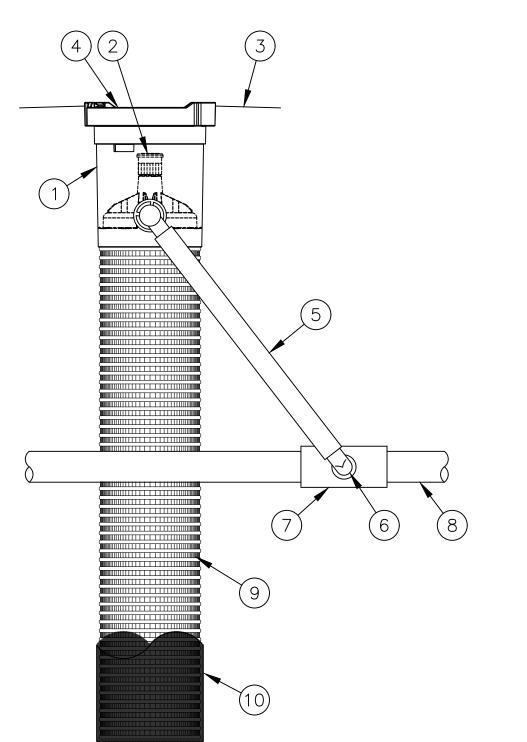
NOT TO SCALE



- 1. LOCATE VALVE BOXES IN PLANTING AREAS.
- 2. WRAP VALVE BOX WITH A MINIMUM OF 3 MIL THICK PLASTIC AND SECURE IT USING DUCT TAPE OR ELECTRICAL TAPE.
- 3. ALL THREADED CONNECTIONS TO BE MADE USING TEFLON TAPE. 4. ALL CHANGES IN ELEVATION SHALL BE MADE USING SCH 40 PVC 45° ELBOWS.

BALL VALVE DETAIL

NOT TO SCALE



ROOT WATERING SYSTEM: RAIN BIRD RWS-B-C-1402 (INCLUDES RETAINER, 36" (91,4 CM) TUBE, 0.5 GPM (1,9 L/M) BUBBLER & INTEGRATED CHECK VALVE, 4" (10,2 CM) GRATE, VERSATILE SWING ASSEMBLY WITH 1/2" (1,3 CM) M NPT INLET)

LINE FLUSHING

VALVE #TLSOV

VALVE BOX

(THREE)

3/4" GRAVEL SUMP

NOT TO SCALE

(1 CUBIC FOOT)

SEE SPECS

- BUBBLER: RAIN BIRD 1402 0.5 GPM (1,9 L/M) (INCLUDED)
- (3) FINISH GRADE/TOP OF MULCH
- (4) 4" (10,2 CM) LOCKING GRATE (INCLUDED)
- (5) 12" (30,5 CM) SWING ASSEMBLY (INCLUDED)
- 6) 1/2" (1,3 CM) MALE NPT INLET (INCLUDED)
- 7) PVC SCH 40 TEE OR EL
- (8) PVC OR POLYETHYLENE LATERAL PIPE
- (9) 4" (10,2 CM) WIDE X 36" (91,4 CM) LONG RIGID BASKET WEAVE CANISTER (INCLUDED)
- (10) OPTIONAL SOCK (RWS-SOCK) FOR SANDY SOILS

- 1. 4" (10,2 CM) GRATE IS ALSO AVAILABLE IN PURPLE (RWS-GRATE-P).
- 2. INSTALL PRODUCT SO THAT THE GRATE IS EVEN WITH FINISH GRADE OR TOP OF MULCH. 3. OPTIONAL SAND SOCK (RWS-SOCK) IS 34" (86,4 CM) IN LENGTH TO COVER MESH BASKET AREA.
- 4. WHEN INSTALLING IN EXTREMELY HARD OR CLAY SOILS, ADD 3/4" (1,9 CM) GRAVEL UNDER AND AROUND THE
- UNIT TO ALLOW FASTER WATER INFILTRATION AND ROOT PENETRATION. 5. ONCE RWS HAS BEEN INSTALLED FILL THE BASKET WITH PEA GRAVEL BEFORE LOCKING LID.

ROOT WATER SYSTEM DETAIL

NOT TO SCALE

- FINISH GRADE SEE SPECS FOR DEPTH SPECS SEE PLANS FOR Techline® CV DRIPLINE SPACING Techline® CV 17mm TUBING

Techline® CV SUBGRADE INSTALLATION

• NETAFIM"

REMOTE CONTROL VALVE

MALE ADAPTER AND TEE

SEE SPECIFICATIONS

PERIMETER LATERALS

2" TO 4" FROM EDGE

Techline® CV DRIPLINE

AREA PERIMETER

- PVC OR POLY EXHAUST HEADER

PLUMBED TO PVC OR POLY

MANUAL FLUSH VALVE

FOR ROW SPACING

WITH DISC FILTER AND PRV

Techline® START CONNECTION

PVC OR POLY SUPPLY HEADER

NOT TO SCALE

DETAIL - C201

♪ NETAFIM™

DETAIL - D211

ONE VALVE PER BOX.

NOT TO SCALE

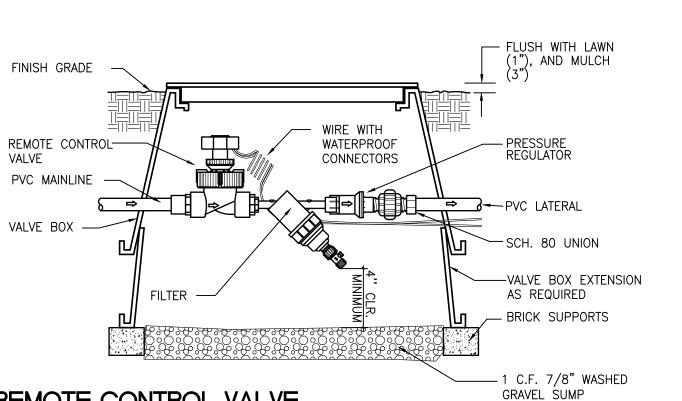
COMPACT SOIL AROUND VALVE BOX.

PROVIDE EXTRA COILS (18") OF EACH WIRE IN VALVE BOX.

REMOTE CONTROL VALVE ASSEMBLY

USE TEFLON OR FLOWABLE SEALANT IN ALL THREADED FITTINGS, PER MANUFACTURES SPEC'S.

MANUAL LINE FLUSHING VALVE TLSOV PLUMBED TO TUBING



REMOTE CONTROL VALVE, PRESSURE REGULATOR AND FILTER DETAIL

NOT TO SCALE

Techline® CV END FEED LAYOUT NOT TO SCALE

PVC SCH 80 SxT 90° ELBOW

WIRE WITH WATERPROOF
WIRE CONNECTOR - TYPICAL

SPARE WIRE WITH WATERPROOF WIRE CONNECTOR ON CUT END

PVC SCH 80 UNION

-FINISIH GRADE

- VALVE BOX WITH COVER

PVC LATERAL

TO SPRINKLERS

- PVC SCH 80 NIPPLE AND FEMALE ADAPTOR

-PVC SCH 80 UNION

-PVC SCH 80 NIPPLE

PVC SCH 80 NIPPLE

PVC MAINLINE

-REMOTE CONTROL VALVE; BODY CLEAR OF SUMP

1 C.F. 7/8" WASHED GRAVEL

▲ NETAFIM*

DETAIL - C101



IARY 223

