CITY OF TACOMA

Department of Public Works, Facilities Management

ADDENDUM NO. 2 **DATE:** November 12, 2019

REVISIONS TO:
Request for Bids Specification No. PW19-0306F
TACOMA FIRE STATION #5

NOTICE TO ALL BIDDERS:

This addendum is issued to clarify, revise, add to or delete from, the original specification documents for the above project. This addendum, as integrated with the original specification documents, shall form the specification documents. The noted revisions shall take precedence over previously issued specification documents and shall become part of this contract.

THE SUBMITTAL DEADLINE:

- The submittal deadline remains the same.

REVISIONS TO THE TECHNICAL SPECIFICATIONS AND DRAWINGS:

- Attached CIVIL revisions to the Drawings.
- Attached ARCHITECTURAL revisions to the Specifications, Drawings, and Substitution Request Approvals.
- Attached STRUCTURAL revisions to the Drawings.
- Attached MECHANICAL revisions to the Drawings.
- Attached ELECTRICAL revisions to the Drawings, and Substitution Request Approvals.
- Attached GEOTECHNICAL revisions to the Drawings.

REVISIONS TO THE TECHNICAL REQUIREMENTS:

- Attached Tacoma Power “Letter of Agreement” dated July 22, 2019.

QUESTIONS RECEIVED

- Attached Questions and Answers

NOTE: Acknowledge receipt of this addendum by initialing the corresponding space as indicated on the SIGNATURE PAGE. Vendors who have already submitted their bid/proposal may contact the Purchasing Division at 253-502-8468 and request return of their bid/proposal for acknowledgment and re-submittal. Or, a letter acknowledging receipt of this addendum may be submitted in an envelope marked Request for Bids Specification No. PW19-0306F Addendum No. 2. The City reserves the right to reject any and all bids, including, in certain circumstances, for failure to appropriately acknowledge this addendum.

Doreen Klaaskate, Senior Buyer
Finance/Purchasing Division

cc: Mina Zarelli, PW/FM

CIVIL

DRAWINGS:

SHEET C0-1 NOTES, LEGENDS AND ABBREVIATIONS
REVISE: Drainage Note 4 as shown on Addendum drawing CSK-01.

SHEET C2-0 GRADING & DRAINAGE PLAN (as shown on re-issued sheet C2-0, and identified as Addendum 2 in the revision portion of the title block)
REVISE: SFMH #1
DELETE: 8" PVC note on driveway
ADD: Note 4 regarding slope
ADD: Details B&C Ramp Details

SHEET C3-0 UTILITY PLAN (as shown on re-issued sheet C3-0, and identified as Addendum 2 in the revision portion of the title block)
ADD: (3) Sanitary Sewer Cleanouts
REVISE: Domestic Service POC location

SHEET C3-1 UTILITY DETAILS
REVISE: Detail A Power & Comm as shown on Addendum drawing CSK-02.

SHEET C4-0 HORIZONTAL CONTROL & PAVING PLAN
REVISE: Parking lot, ramp dimensions, and notes as shown on Addendum drawing CSK-03.

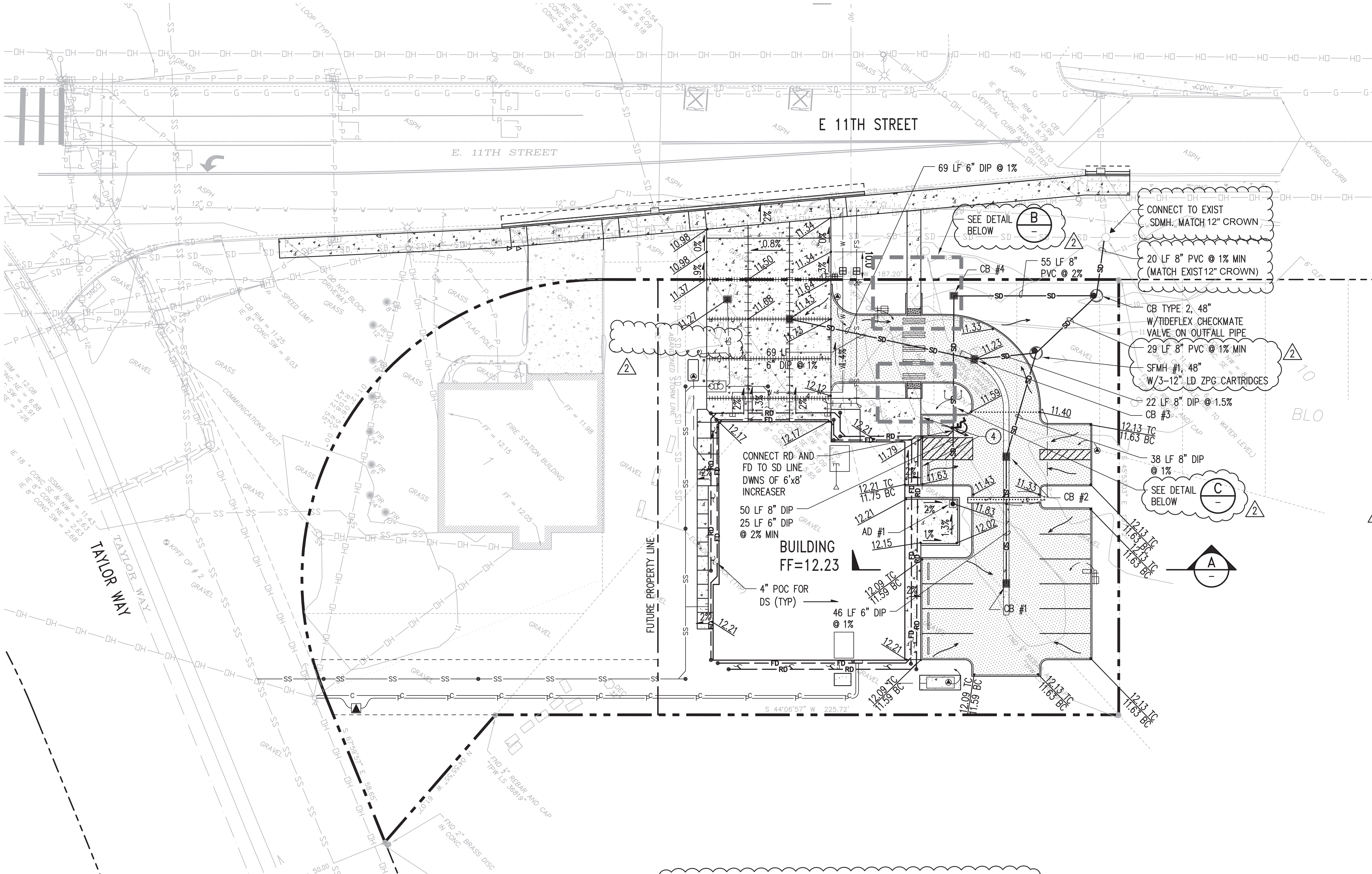
SHEET C4-1 PAVING DETAILS (as shown on re-issued sheet C4-1, and identified as Addendum 2 in the revision portion of the title block)
ADD: City of Tacoma Standard Details for Curb Ramps
ADD: Note to read "2% max slope" to the Accessible Parking Stall Detail

SHEET WO-05 SIDEWALK, DRIVEWAYS, AND SERVICES (as shown on re-issued sheet C4-1, and identified as Addendum 2 in the revision portion of the title block)
ADD: Note to read "2% max slope" to address the sidewalk cross-slope.
ADD: "7.0'" dimension to the sidewalk.
REVISE: dimensions to increase the driveway ramps to ensure slope does not exceed 8.3% max
ADD: Note to read "Match existing elevations to provide positive flow to existing catch basins"

SHEET WO-06 SANITARY SEWER PLAN & PROFILE (as shown on re-issued sheet C4-1, and identified as Addendum 2 in the revision portion of the title block)
ADD: (2) Sanitary Sewer Cleanouts
REVISE: Sanitary Sewer System Profile to reflect the correct elevations and show added cleanouts.

SHEET WO-07 SANITARY SEWER DETAILS (as shown on re-issued sheet C4-1, and identified as Addendum 2 in the revision portion of the title block)
REVISE: City of Tacoma Standard Details to match currently adopted versions.

SHEET WO-08 STREET IMPROVEMENTS - STANDARD PLANS (as shown on re-issued sheet C4-1, and identified as Addendum 2 in the revision portion of the title block)
REVISE: City of Tacoma Standard Details to match currently adopted versions.



STORM DRAINAGE

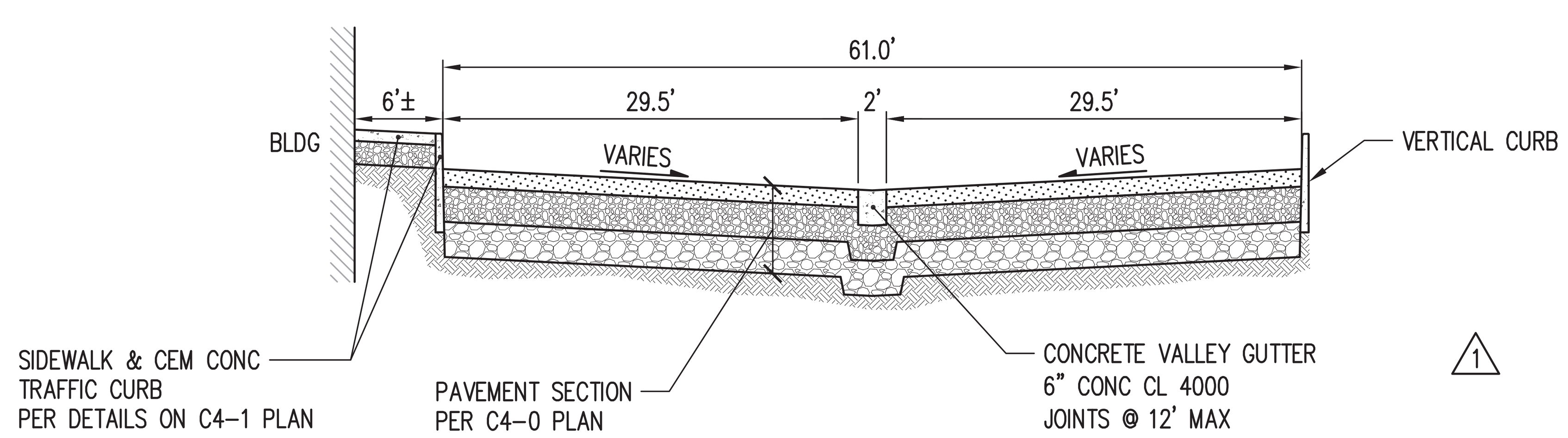
STRUCTURE	RIM	INVERTS
CB TYPE 2, 48" (SC)	10.83	6.35
SFMH #1, 48" (SC)	11.83±	9.19 (8" IN) 7.34 (8" OUT)
(3) CB #1, TYPE 1 (GRATE)	11.23	10.03
CB #2, TYPE 1 (GRATE)	11.23	9.54
CB #3, TYPE 1 (GRATE)	11.28	9.54
CB #4, TYPE 1 (SC)	12.03	7.45
(3) CB #5, TYPE 1 (GRATE)	11.43	10.23
AD #1	11.83	9.25

NOTES:

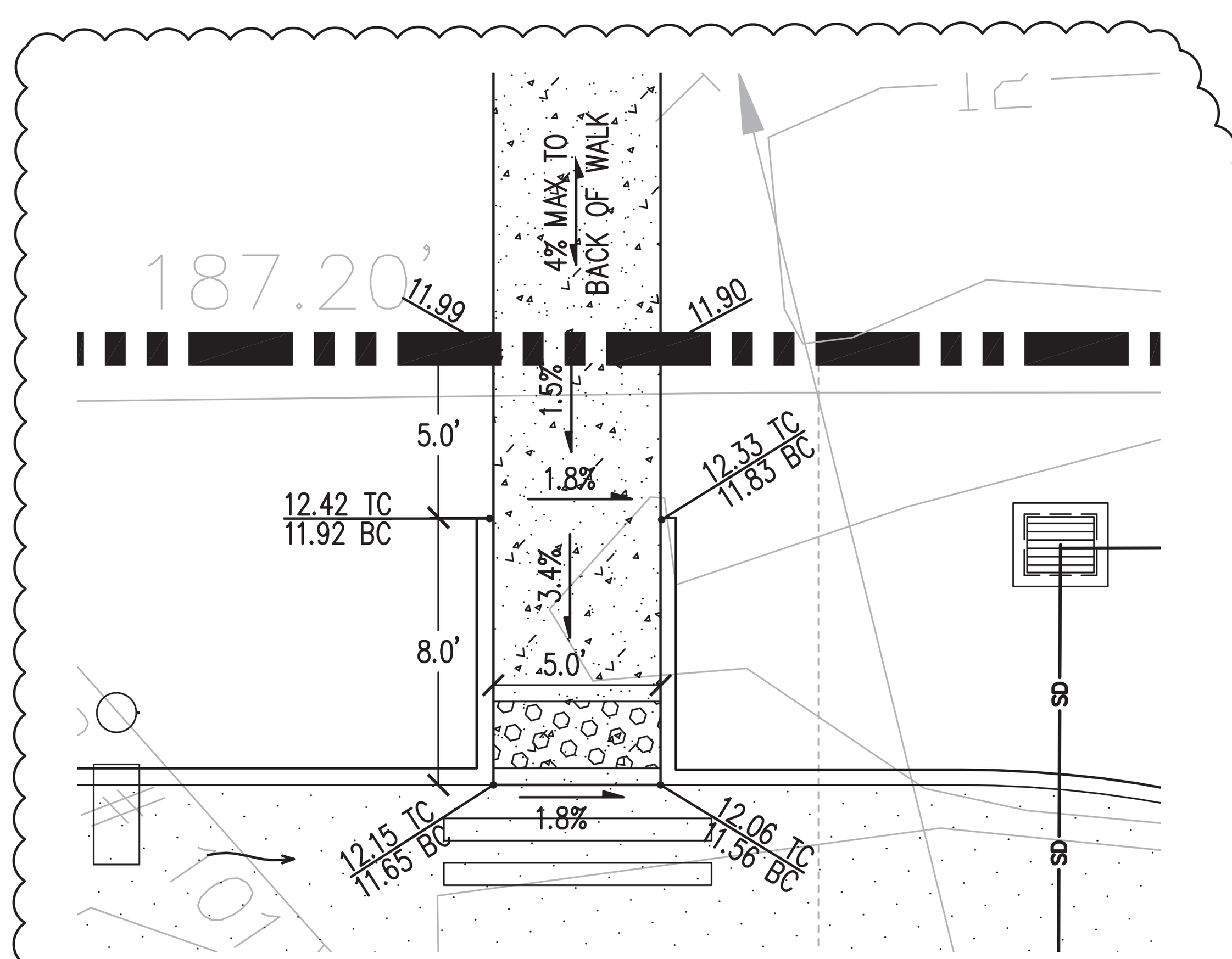
1. PRIOR TO START OF CONSTRUCTION AND PLACING MATERIAL ORDERS, VERIFY EXISTING STORM INVERTS TO ENSURE THAT PROPOSED SYSTEM CAN BE INSTALLED AS DESIGNED. IF EXISTING STORM INVERTS ARE HIGHER THAN SHOWN, NOTIFY ENGINEER TO ADJUST PIPE SLOPES.
2. INFORMATION IN RIGHT OF WAY NOTED HERE IS FOR ON SITE CONTINUITY COORDINATION. REFER TO WORK ORDER PLANS FOR DETAILED CONTENT.
3. THE FOLLOWING SUGGESTION IS PROVIDED FOR THE INSTALLATION OF CB #1 TO MAINTAIN THE STRUCTURAL INTEGRITY OF THE CATCH BASIN: INSTALL THE DIP WITHOUT BELL-END WITHIN THE UPPER SECTION OF THE CATCH BASIN'S KNOCKOUT; INSTALL THE FRAME AND GRATE REVERSED WITHIN A 2" RISER (DETAIL C, C2-2) OVER THE CB STRUCTURE. CONTRACTOR SHALL VERIFY IN THE FIELD AND/OR PROVIDE A DIFFERENT PROPOSAL.
4. THE CURB FRONTING THE ADA STALLS IS FLUSHED WITH THE ASPHALT TO ALLOW ADA INGRESS/EGRESS WITH LESS THAN 2.0% SLOPE IN ALL DIRECTIONS

LEGEND & ABBREVIATIONS

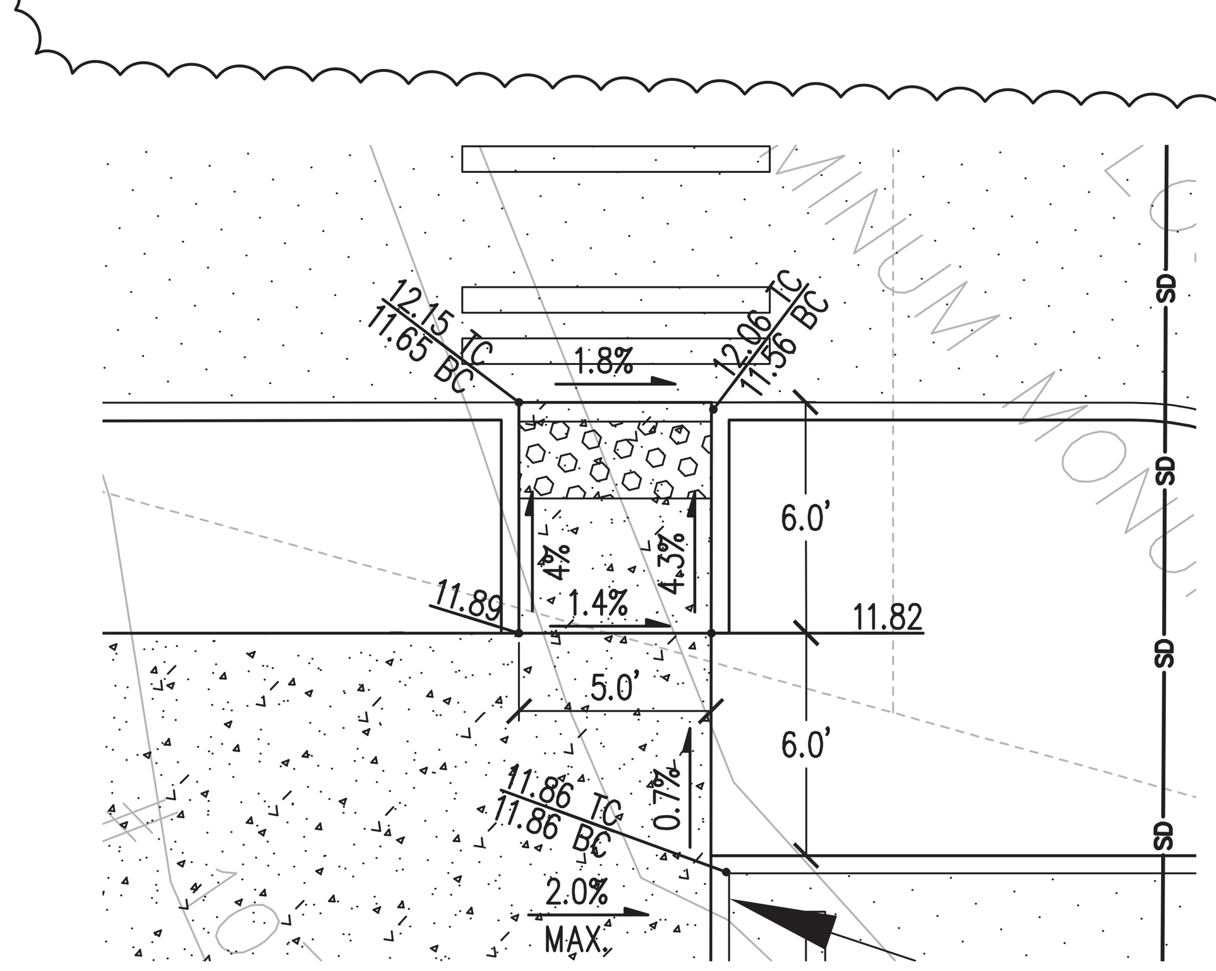
XX/XX	SPOT ELEVATION
18	EXISTING GRADE CONTOUR
SD	STORM DRAIN LINE
RD	6" ROOF DRAIN LINE
FD	4" FOOTING DRAIN
■	STORM CATCH BASIN, TYPE 1
	STORMFILTER MANHOLE (SFMH)
•	CLEAN OUT (E, C2-1)
	AREA DRAIN (D, C2-1)
TC	TOP OF CURB
BC	BOTTOM OF CURB
UPS	UPSTREAM
DWNS	DOWNSTREAM
DS	DOWNSPOUT
SC	SOLID COVER
DIP	DUCTILE IRON PIPE



INVERTED CROWN PARKING LOT & ACCESS (A)
SCALE: VERT: 1"=10, HORZ: 1"=50'



RAMP DETAIL (B)
1" = 5'



RAMP DETAIL (C)
1" = 5'

0 10 20 40
1 inch = 20 feet

LAWHEAD ARCHITECTS P.S.
12242 NORTHUP WAY BELLEVUE, WA 98005 (425) 556-1220 FAX (425) 556-1228

SIGNATURE... 11.12.19
OWNER...
TACOMA FIRE DEPT

(1) COMMENT MEMO #1 9.10.19
(2) ADDENDUM #2 11.12.19

Tacoma Fire Station #5
3520 E. 11th Street, Tacoma, WA 98421

PHASE... Bid Set
JOB NO... 1900060
DATE... 9.24.19
SHEET TITLE... GRADING & DRAINAGE PLAN
SHEET NO... C2-0

kpff
1601 5th Avenue, Suite 1600 Seattle, WA 98101
206.622.5822
www.kpff.com

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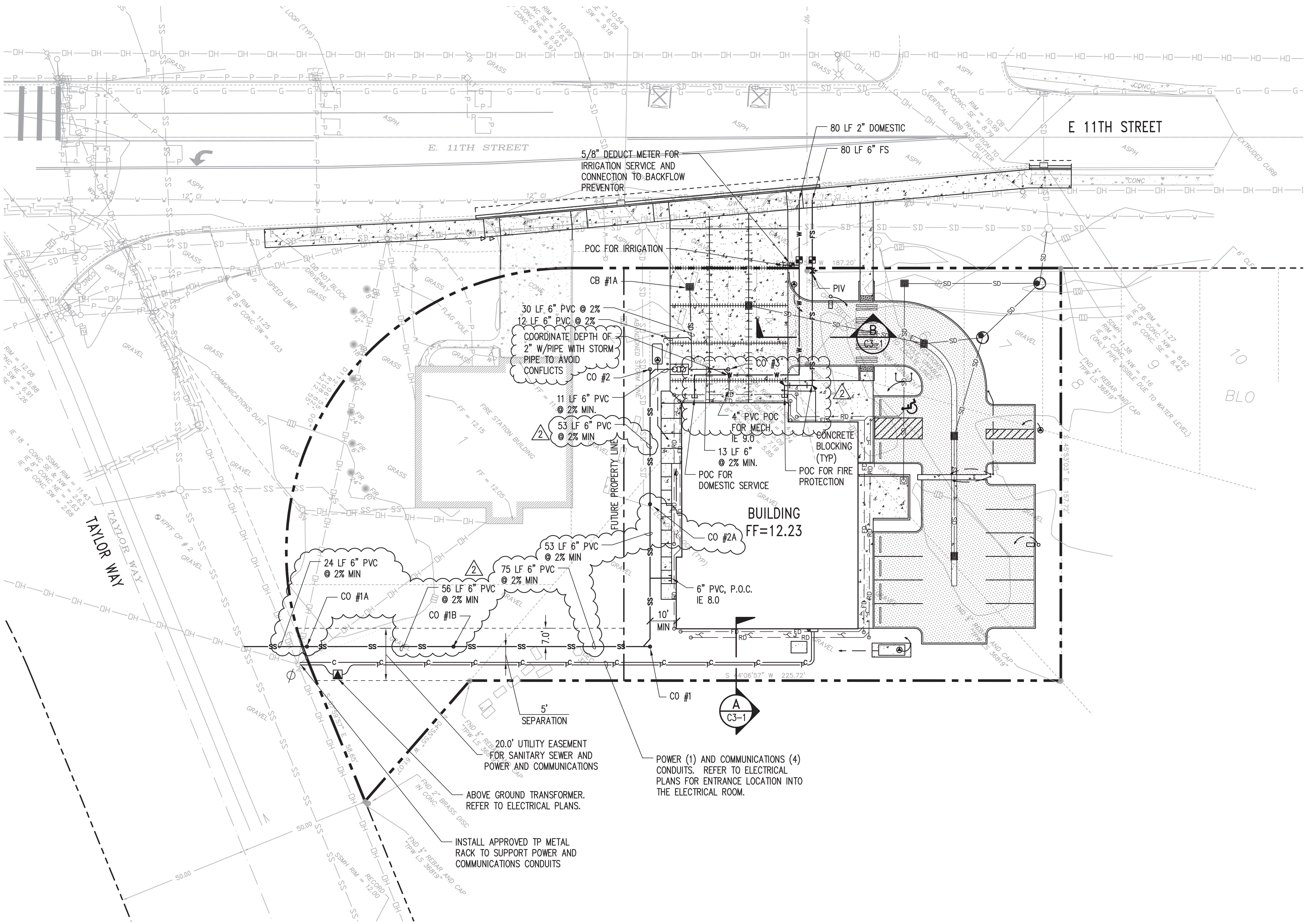
Nov 08, 2019 – 3:10pm CHedlund

LAWHEAD ARCHITECTS P.S.

12342 NORTHUP WAY
BELLEVUE, WA 98005
(425) 556-1220
FAX (425) 556-1228



SANITARY SEWER		
STRUCTURE	RIM	INVERTS
TAP INTO EX. 8" MAIN		2.83 (VERIFY) 3.00± TAP
CO #1	11.83	6.13
CO #1A	11.8±	4.60
CO #B	11.8±	3.48
CO #2	11.83±	8.25
CO #2A	11.8±	7.19
CO #3	12.00±	8.80
CB #1A, TYPE 1	11.27	8.77
OLDCASTLE OWS 610 OIL WATER SEPARATOR	11.83	8.47 (IN) 8.47 (OUT)

SIGNATURE...

ALBERTO G. CISNEROS STATE OF WASHINGTON 32120 REGISTERED PROFESSIONAL ENGINEER 11.12.19

OWNER...

FIRE TACOMA DEPT.

1 COMMENT MEMO #1 9.10.19
2 ADDENDUM #2 11.12.19

LEGEND & ABBREVIATIONS

- OIL WATER SEPARATOR (D / C3-2)
- —P— POWER DUCT 2-4" CONDUIT
- —C— COMMUNICATIONS DUCT 2-4" CONDUIT
- —SS— SANITARY SEWER LINE
- —W— WATER LINE (1-1/2" DOMESTIC)
- —FS— FIRE SERVICE LINE (4")
- SANITARY SEWER MANHOLE
- WATER METER
- FIRE HYDRANT
- GATE VALVE
- CONCRETE THRUST BLOCK
- CLEAN OUT (C / C3-1)
- E— CAP UTILITY FOR FUTURE EXTENSION

IRR	IRRIGATION
FS	FIRE SERVICE
TC	TOP OF CURB
BC	BOTTOM OF CURB
OHT	OVERHEAD TELEPHONE
TP	TACOMA POWER

N

0 10 20 40
1 inch = 20 feet

Tacoma Fire Station #5

3520 E. 11th Street, Tacoma, WA 98421

kpff

1601 5th Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
www.kpff.com

PHASE... Bid Set

JOB NO... 1900060

DATE... 9.24.19

SHEET TITLE... UTILITY PLAN

SHEET NO... C3-0 (2)

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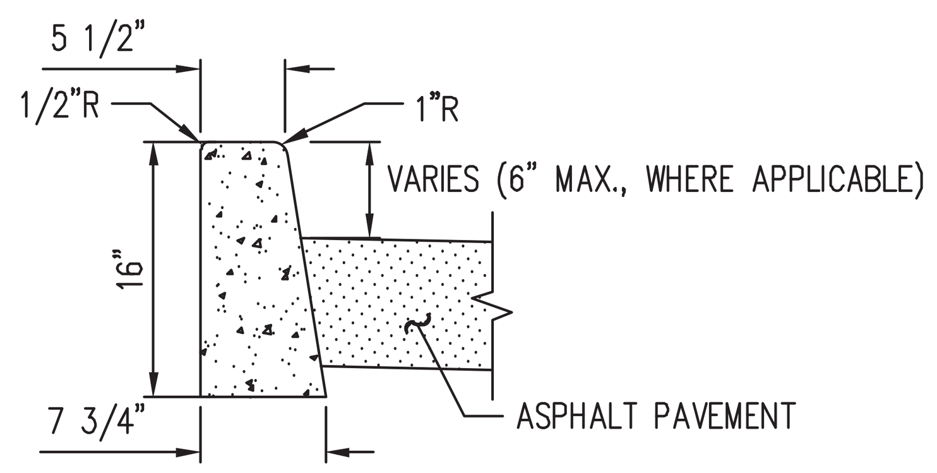
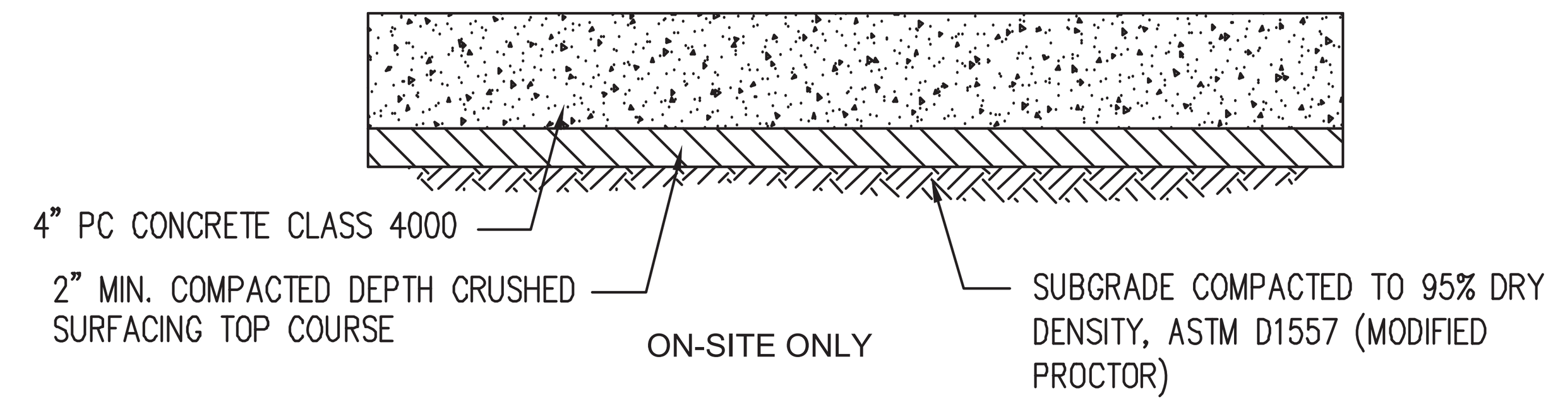


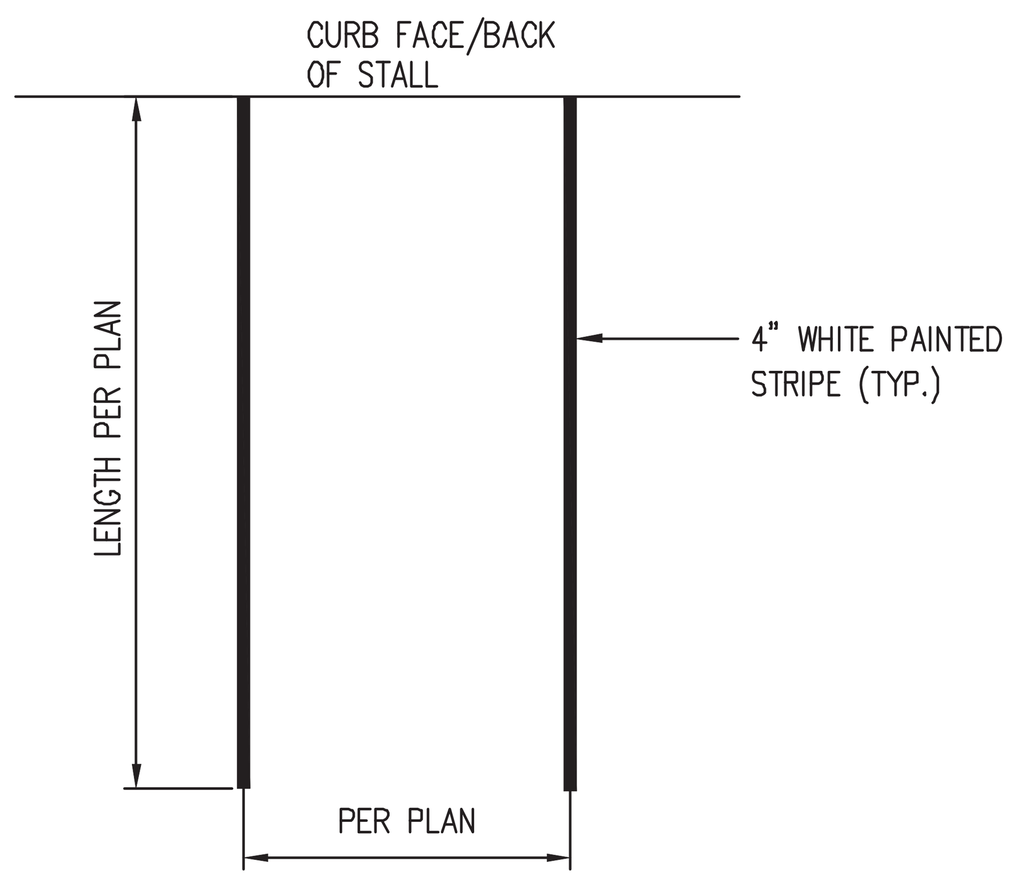
CEMENT CONCRETE TRAFFIC CURB (A)

PER COT STD PLAN NO. SU-03



CONCRETE SIDEWALK DETAIL (B)

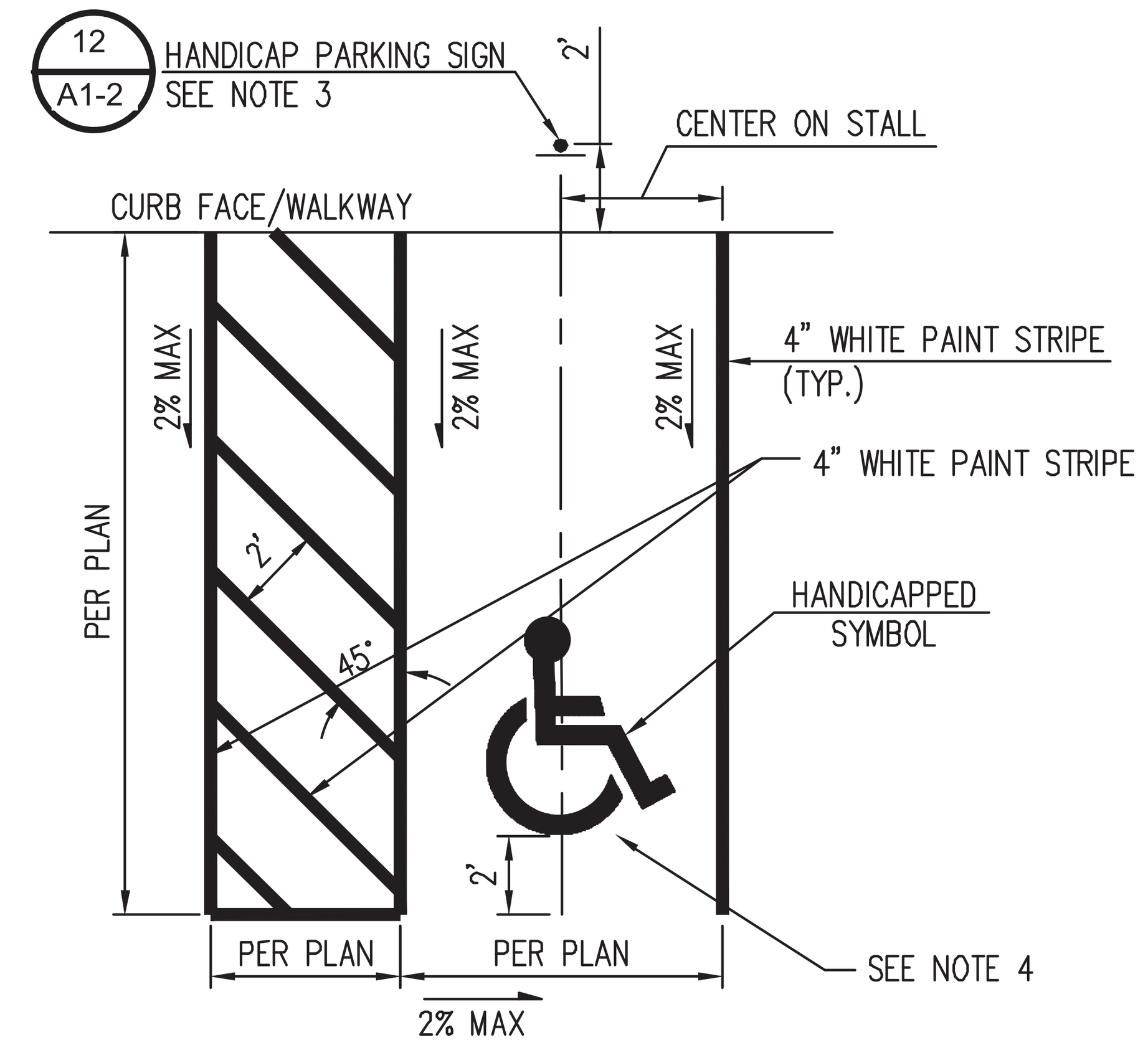
NTS



STANDARD PARKING STALL DETAIL (C)

NTS

2



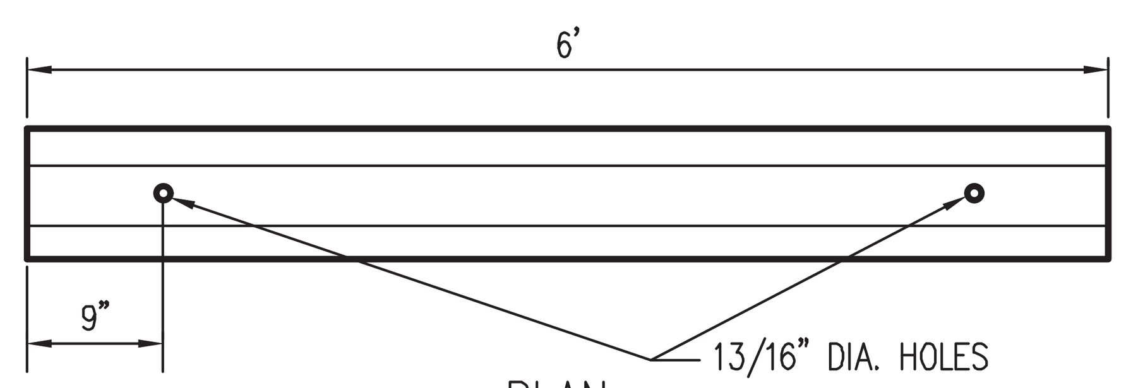
NOTES:

1. ADA SIGN INDICATING A PARKING SPACE OR STALL FOR A PHYSICALLY DISABLED PERSON SHALL BE INSTALLED BETWEEN 60" AND 84" ABOVE THE SIDEWALK SURFACE.
2. AN ACCESS PARKING SPACE SYMBOL, PER WSDOT STD PLAN M-24.60-04 IS REQUIRED FOR EACH ACCESSIBLE PARKING STALL. A BLUE BACKROUND AND WHITE BORDER ARE REQUIRED WHEN THE SYMBOL IS INSTALLED ON A CEMENT CONCRETE SURFACE.
3. FIELD VERIFY THE EXACT LOCATION OF THE HANDICAP PARKING SIGN WITH RESPECT TO THE ADA RAMP AND SIDEWALK.
4. ACCESSIBLE PARKING STALL SHALL BE LOCATED TO THE LEFT OR RIGHT OF THE PASSENGER LOADING ZONE, AS SHOWN ON THE PLAN.

ACCESSIBLE PARKING STALL DETAIL (D)

NTS

ELEVATION



PLAN

PRECAST CURB BUMPER

ATTACHMENT DETAIL

NOTES

1. THE NON-SHRINK GROUT USED TO ATTACH THE PRECAST CURB SHALL CONSIST OF 3:1 SAND AND CEMENT. GROUT TO A DEPTH OF 1" FROM THE TOP OF THE BUMPER.
2. LOCATIONS FOR WEEPHOLES, AND V-SLOTS SHALL BE IDENTIFIED ON THE DELIVERY ORDER DRAWINGS.
3. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.

WHEEL STOP (E)

NTS

2

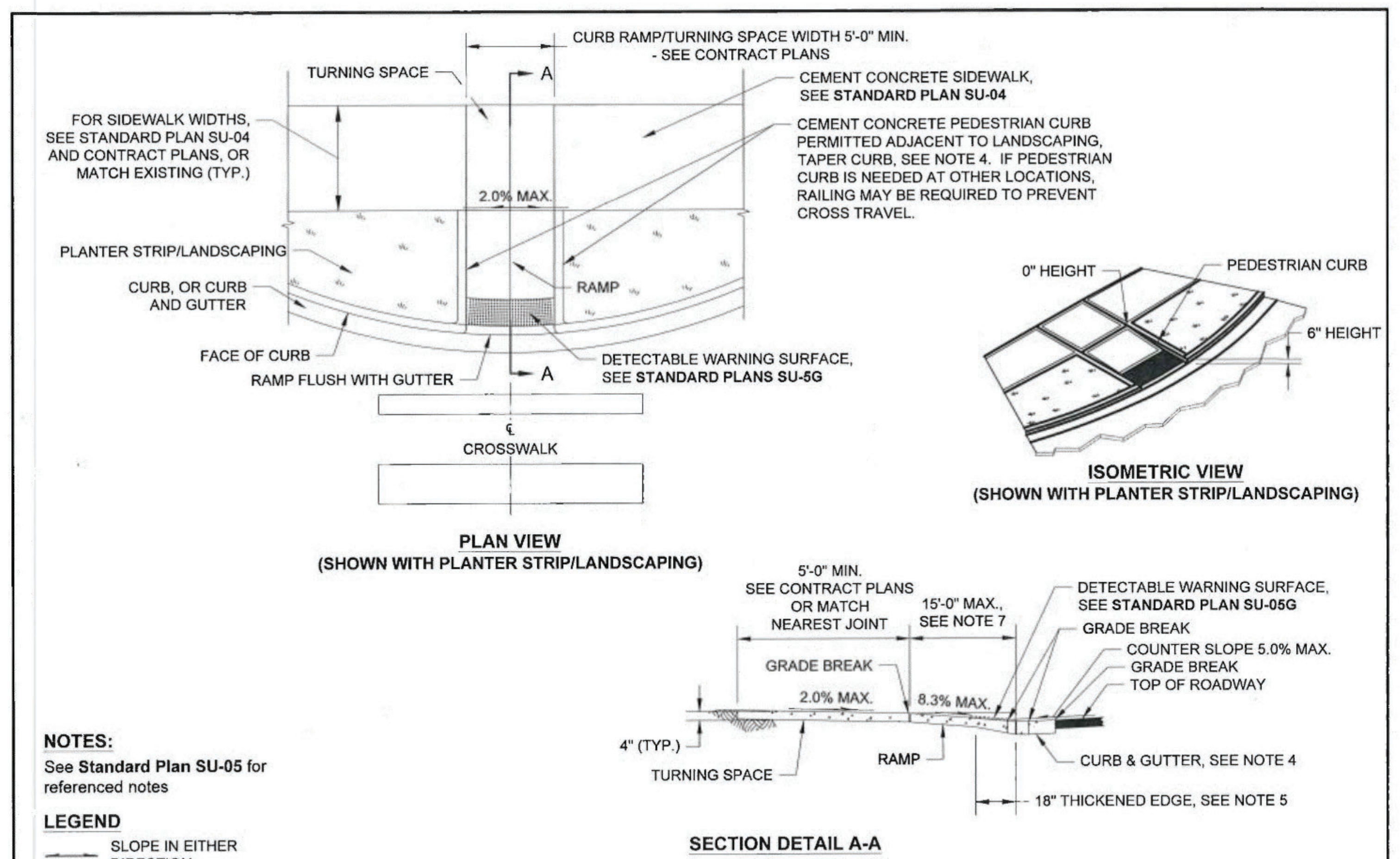
GENERAL NOTES:

1. Provide a separate directional curb ramp for each marked or unmarked crosswalk. Directional curb ramps are preferred over 45 degree ramps. Curb ramp location shall be placed within the width of the associated crosswalk, or as shown on the Contract Plans. The curb ramp centerline shall be parallel to the direction of the crossing. Forty-five (45) degree curb ramps shall be installed only after approval by the City's ADA Coordinator or the Street Operations Division Manager.
2. Where "GRADE BREAK" is called out, the entire length of the grade break between the two adjacent surface planes shall be flush and perpendicular to the direction of travel. There shall be no vertical discontinuity between the base of curb ramp and gutter line.
3. Do not place grates, junction boxes, access covers, or other appurtenances in front of the curb ramp or on any part of the curb ramp or turning space. Placement on or in front of ramp flares is allowed.
4. See Contract Plans for the curb design specified. See **Standard Plan SU-03** and **SU-03A** for Curb, and Curb and Gutter Details.
5. A thickened edge shall be constructed to full depth of adjacent curb along entire curb radius.
6. For sidewalk and curb ramps within the North Slope Historical District area see **North Slope Historic District Site Map, HD-NS01.** Apply Lamp Black 1lb. per cubic yard of cement concrete or as required for discoloration in accordance with ASTM D209-81 Standard Specifications for Lamp Black pigment.
7. The running slope of a curb ramp shall not exceed 8.3% but does not require the ramp length to exceed 15 feet to avoid chasing the slope indefinitely when connecting to steep grades.
8. Curb ramp, turning space and flares shall receive a broom finish, see **WSDOT Standard Specifications 8-14**.
9. Return curbs, (pedestrian curbs), may only be used with landscaping or railing. Return curbs, (pedestrian curbs), shall not be used to prevent pedestrians from crossing streets.
10. All curb ramp designs shall be stamped by a Washington State licensed Professional Engineer. If meeting the current design standards is not possible, curb ramps shall be constructed to the maximum extent feasible as indicated by an Engineer's note on the stamped drawings. Rationale supporting the design variance shall be provided by the Engineer and shall include a description of the scope of work, the site-specific factors affecting compliance, and the measures implemented to improve compliance.
11. Pedestrian traffic should be aligned to the receiving curb ramp. The existing curb ramps shall be evaluated using criteria in the City's Curb Ramp Installation Matrix.
12. Consult the City's Curb Ramp Installation Matrix and the Right Of Way Restoration Policy for additional requirements.
13. Conduit for APS equipment shall be installed during curb ramp construction at all signalized intersections and at intersections where signalization is anticipated within the next 6 years. Coordinate with Public Works - Engineering, Traffic Section.
14. A Pedestrian Accessibility Control Plan shall be developed in conjunction with each project-specific Temporary Traffic Control Plan for all work in the ROW.
15. Pedestrian traffic shall NOT be directed behind the stop bar.
16. Curb ramp alignment should be consistent with crosswalk alignment
17. Curb ramp shall be 5' minimum in width.
18. Catch basins shall be located upstream of curb ramps outside of flare/wing for new construction or when performing storm sewer upgrades.
19. For constructability purposes, the City recommends designing to **less than** the maximum allowable slopes.

REVIEWED BY			APPROVED FOR PUBLICATION	CITY OF TACOMA
DCS PUBLIC WORKS	GMS ENVIRONMENTAL SERVICES		CITY ENGINEER 8/16/16 DATE	CURB RAMP DETAILS GENERAL INFORMATION
NA TACOMA POWER	NA TACOMA WATER			STANDARD PLAN NO. SU-05

COT STANDARD PLAN NO. SU-05 (F)

NTS



NOTES:
See **Standard Plan SU-05** for referenced notes

LEGEND
SLOPE IN EITHER DIRECTION

REVIEWED BY			APPROVED FOR PUBLICATION	CITY OF TACOMA
DCS PUBLIC WORKS	GMS ENVIRONMENTAL SERVICES		CITY ENGINEER 8/16/16 DATE	PERPENDICULAR CURB RAMP TYPE 'B'
NA TACOMA POWER	NA TACOMA WATER			STANDARD PLAN NO. SU-05B

COT STANDARD PLAN NO. SU-05B (G)

NTS

LAWHEAD ARCHITECTS P.S.
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BELLEVUE, WA 98005
(425) 556-1220
FAX (425) 556-1228

SIGNATURE...

ALBERTO G. CISNEROS STATE OF WASHINGTON 32120 REGISTERED PROFESSIONAL ENGINEER
11.12.19

OWNER...

FIRE TACOMA DEPT.

1 COMMENT MEMO #1 9.10.19
2 ADDENDUM #2 11.12.19

Tacoma Fire Station #5

3520 E. 11th Street, Tacoma, WA 98421

PHASE... Bid Set

JOB NO... 1900060

DATE... 9.24.19

SHEET TITLE... PAVING DETAILS

kpff
1601 5th Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
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SHEET NO... 2 C4-1

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DRAINAGE NOTES:

1. PER VOLUME 4, SECTION 4.8.8.2, BARE GALVANIZED METAL SHALL NOT BE USED FOR MATERIALS THAT CONVEY STORMWATER, SUCH AS SEDIMENT RISERS, ROOFS, CANOPIES, SIDING, GUTTERS, DOWNSPOUTS, ROOF DRAINS, AND PIPES. ANY GALVANIZED MATERIALS SHALL HAVE AN INERT, NON-LEACHABLE FINISH, SUCH AS A BAKED ENAMEL, FLUOROCARBON PAINT (SUCH AS KYNAR OR HYLAR), FACTORY-APPLIED EPOXY, PURE ALUMINUM, OR ASPHALT COATING. ACRYLIC PAINT, POLYESTER PAINT, FIELD-APPLIED, AND ZINC-ALUMINUM ALLOY (SUCH AS GALVALUME OR ZINCALUME) COATINGS ARE NOT ACCEPTABLE.

2. ALL PIPE AND APPURTENANCES SHALL BE LAID IN ACCORDANCE WITH CITY OF TACOMA SPECIFICATIONS. THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL AND ANY REQUIRED PIPE BEDDING TO AN EVEN GRADE SO THAT THE ENTIRE DRAINAGE FACILITY IS SUPPORTED BY A UNIFORMLY DENSE UNYIELDING BASE.

3. SD PIPE SHALL BE PVC SCH 35 EXCEPT FOR UNDERSLAB, PERIMETER FOOTING DRAINS WHICH SHALL BE SCH 40, UNLESS NOTED OTHERWISE. 2

4. ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, NOT LOCATED WITHIN A TRAVELED ROADWAY OR SIDEWALK SHALL HAVE SOLID LOCKING LIDS. ALL DRAINAGE STRUCTURES ASSOCIATED WITH A PERMANENT RETENTION/DETENTION FACILITY SHALL HAVE SOLID LOCKING LIDS.

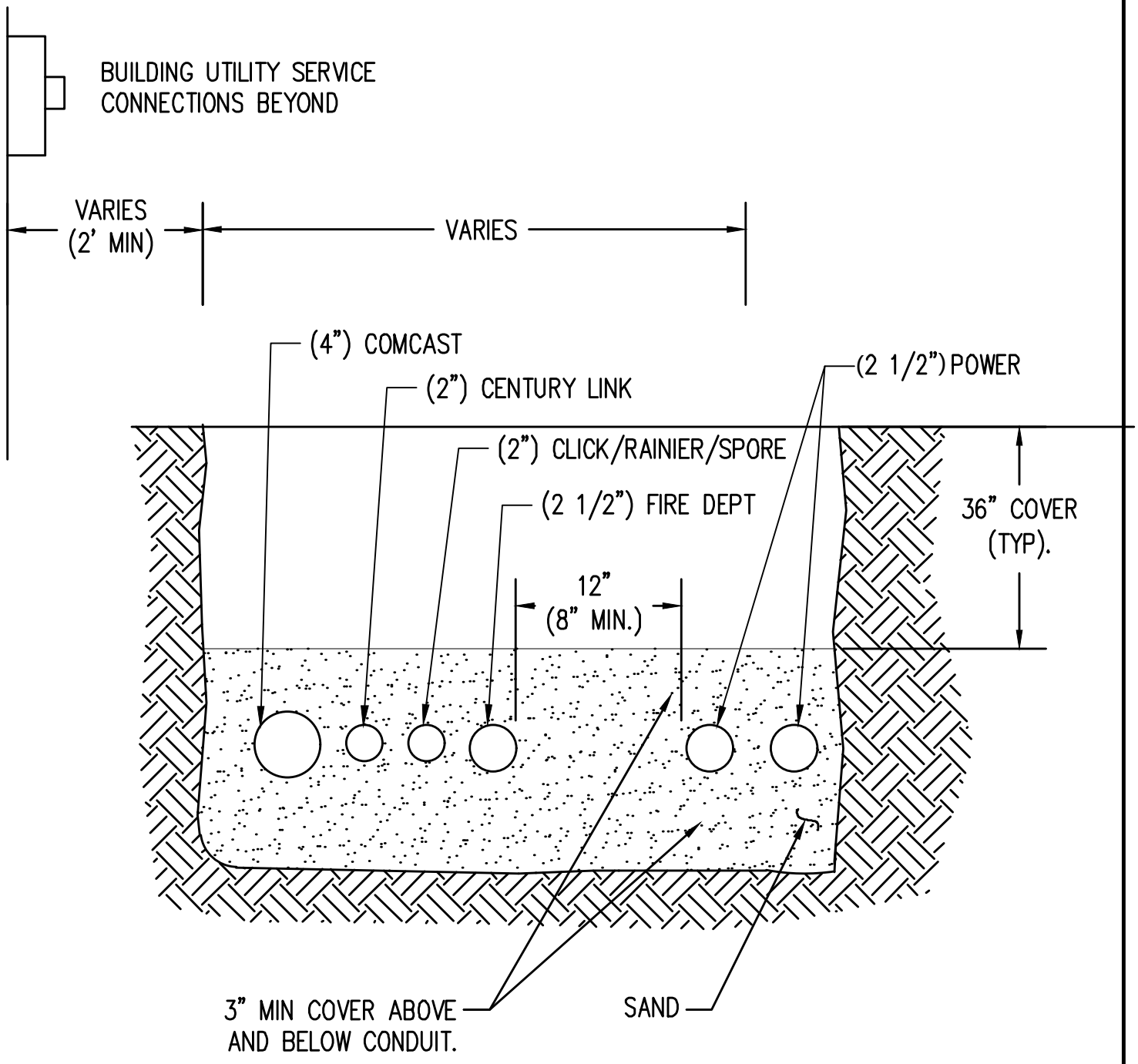
5. ALL CATCH BASIN GRATES SHALL CONFORM TO CITY OF TACOMA SWMM WHICH INCLUDES THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS" AND "PROPERTY OF COT", EXCEPT THAT PRIVATE DRAINAGE SYSTEMS SHALL NOT HAVE THE WORDS "PROPERTY OF COT".

6. DRAINAGE EASEMENTS ARE REQUIRED FOR DRAINAGE SYSTEMS DESIGNED TO CONVEY FLOWS THROUGH INDIVIDUAL LOTS.

7. THE APPLICANT/CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUT CONVEYANCE LINES WITH RESPECT TO UTILITIES (E.G., POWER, GAS, TELEPHONE, TELEVISION, ETC.).

8. SEASONAL CLEARING IS LIMITED BETWEEN OCTOBER 1 AND MARCH 30 INCLUSIVE, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE REVIEWING AGENCY.

Project Title: **TACOMA FIRE STATION #5**	Drawing Title: **ADDENDUM**	ASI/RFI/CSK Number: **CSK-01**
		Drawing Reference: **C0-1** / Scale: **NTS**
Client: **LAWHEAD ARCHITECTS**	kpff 1601 5th Avenue, Suite 1600 Seattle, WA 98101 206.622.5822 www.kpff.com	Date: **11/12/19** / Drawn/Ck'd By: **TAD/AGC**

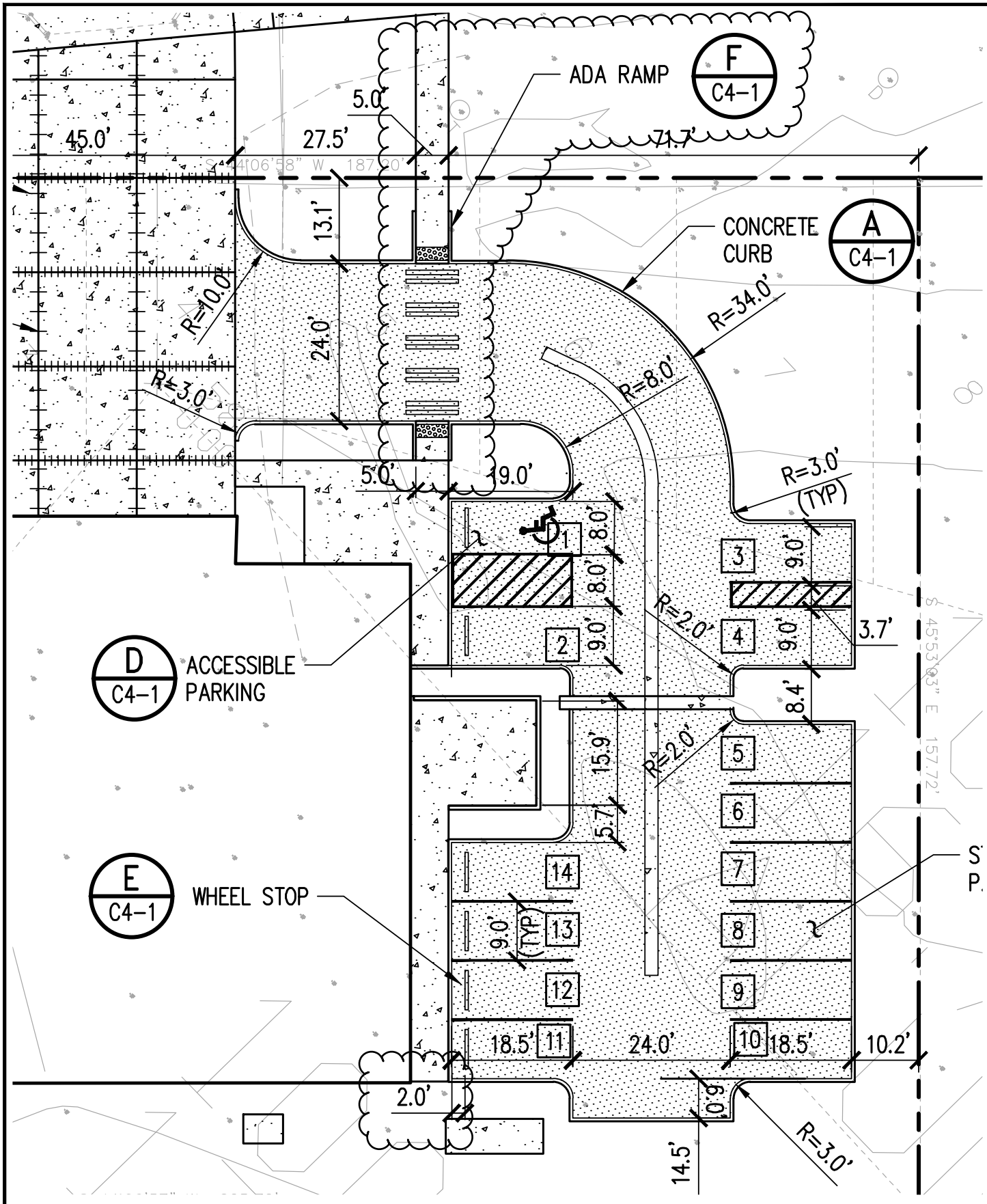


POWER & COMM

NTS

A
–

Project Title: **TACOMA FIRE STATION #5**	Drawing Title: **ADDENDUM**	ASI/RFI/CSK Number: **CSK-02**	
		Drawing Reference: **C3-1**	Scale: **NTS**
Client: **LAWHEAD ARCHITECTS**	kpff 1601 5th Avenue, Suite 1600 Seattle, WA 98101 206.622.5822 www.kpff.com	Date: **11/12/19**	Drawn/Ck'd By: **TAD/AGC**



Project Title **TACOMA FIRE STATION #5**	**Drawing Title** **ADDENDUM**	**ASI/RFI/CSK Number** **CSK-03**	
		Drawing Reference **C4-0**	**Scale** **1"=20'**
Client **LAWHEAD ARCHITECTS**	kpff 1601 5th Avenue, Suite 1600 Seattle, WA 98101 206.622.5822 www.kpff.com	**Date** **11/12/19**	**Drawn/Ck'd By** **TAD/AGC**

EXISTING LEGEND

- POWER VAULT
- WATER METER
- WATER VALVE
- COMMUNICATIONS MANHOLE
- UTILITY POLE
- SERVICE POLE
- CATCH BASIN
- ANCHOR
- SIGN
- HYDRANT
- CONIFER TREE AS NOTED
- LEFT TURN
- CONCRETE
- BUILDING
- JUNCTION BOX
- RAILROAD CROSSING PAINT
- STREET LIGHT
- SANITARY SEWER MANHOLE
- STORM DRAIN MANHOLE
- GAS
- WATER
- UNDERGROUND POWER
- OVERHEAD UTILITY
- COMMUNICATIONS
- STORM
- SANITARY

PROPOSED LEGEND

- SANITARY MANHOLE
- WATER METER
- SANITARY SEWER LINE
- POWER DUCT, 2-4" CONDUIT
- OVERHEAD COMMUNICATIONS
- POWER LINE
- GAS LINE
- WATER LINE
- FIRE SERVICE LINE (4")
- CONCRETE SIDEWALK

NOTES:

1. ROW IMPROVEMENTS INCLUDE REMOVAL OF EXISTING SIDEWALK BEHIND CURB AND CLOSURE OF EXISTING DRIVEWAYS NO LONGER NEEDED TO SERVICE THIS PROJECT. NOTE THAT EXISTING DAMAGE CURB BEYOND THE DRIVEWAYS WILL NEED REMOVAL AND REPLACEMENT.
2. NEW SIDEWALK SHALL ADHERE TO COT'S PUBLIC RIGHT OF WAY GUIDELINES AND AMERICAN DISABILITIES ACT.
3. OVERHEAD COMMUNICATION CABLES NEEDED TO BE EXTENDED OVERHEAD TO DROP POLE TO PROVIDE SERVICE TO FIRE STATION #5. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY PURVEYOR.
4. INSTALLATION OF WATER METERS FOR DOMESTIC, FIRE, AND IRRIGATION SERVICES IS BY CITY OF TACOMA UTILITIES AT PROJECT EXPENSE BY OWNER. CONTRACTOR WORK SHALL ANTICIPATE EXCAVATION, BACKFILL AND COMPACTION AND FINAL SURFACE RESTORATION AFTER SERVICE INSTALLATION.

0 5 10 20
1 inch = 10 feet

Nov 08, 2019 – 4:08pm CHedlund Z:\1900001-1900999\1900060 Tacoma FS #5\CADD\Design\SIP\05 SIP FS5 UT.dwg

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Seattle, WA 98101
206.622.5822
www.kpff.com

Call 811 two business days before you dig

Tacoma

NO	REVISION	DATE	APPD
2	ADDENDUM #2	11.12.19	

FINAL CONSTRUCTION CHECKED BY / DATE / FIELD BOOKS

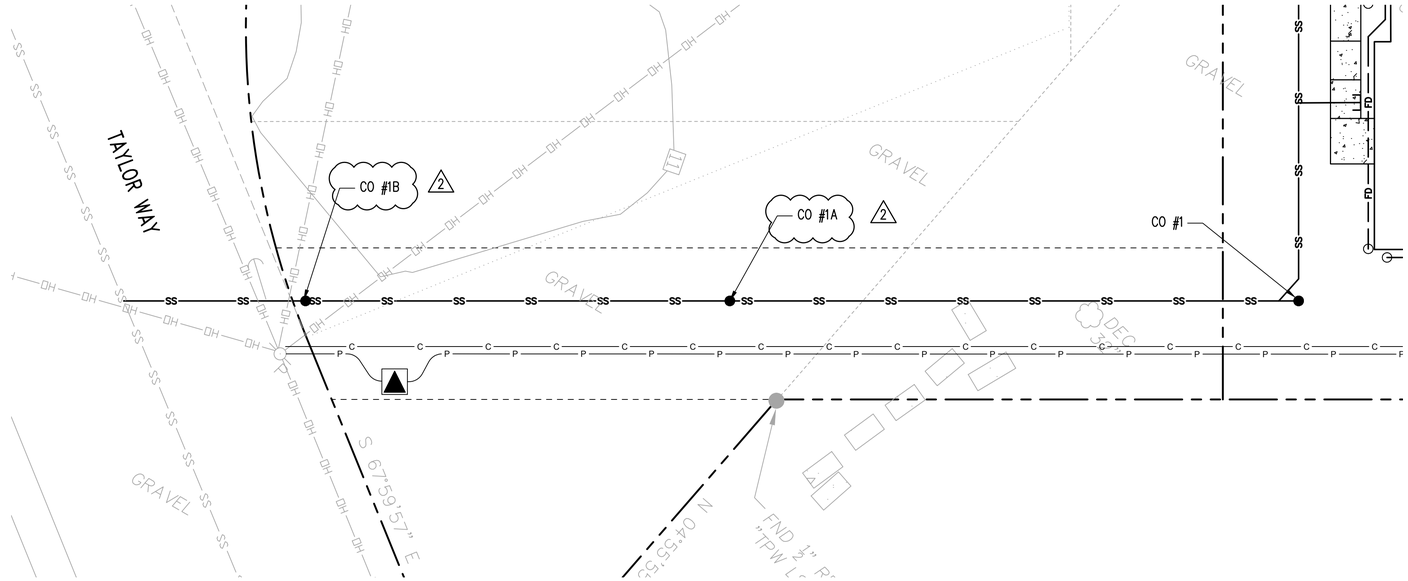
DATE: 11.12.19	SCALE: AS NOTED
DESIGNED: AGC	CHECKED: AGC
DRAWN: TAD	PROJECT NAME: FIRE STATION #5
DRAWING NAME: E 11TH STREET GRADING AND PAVING PLAN	

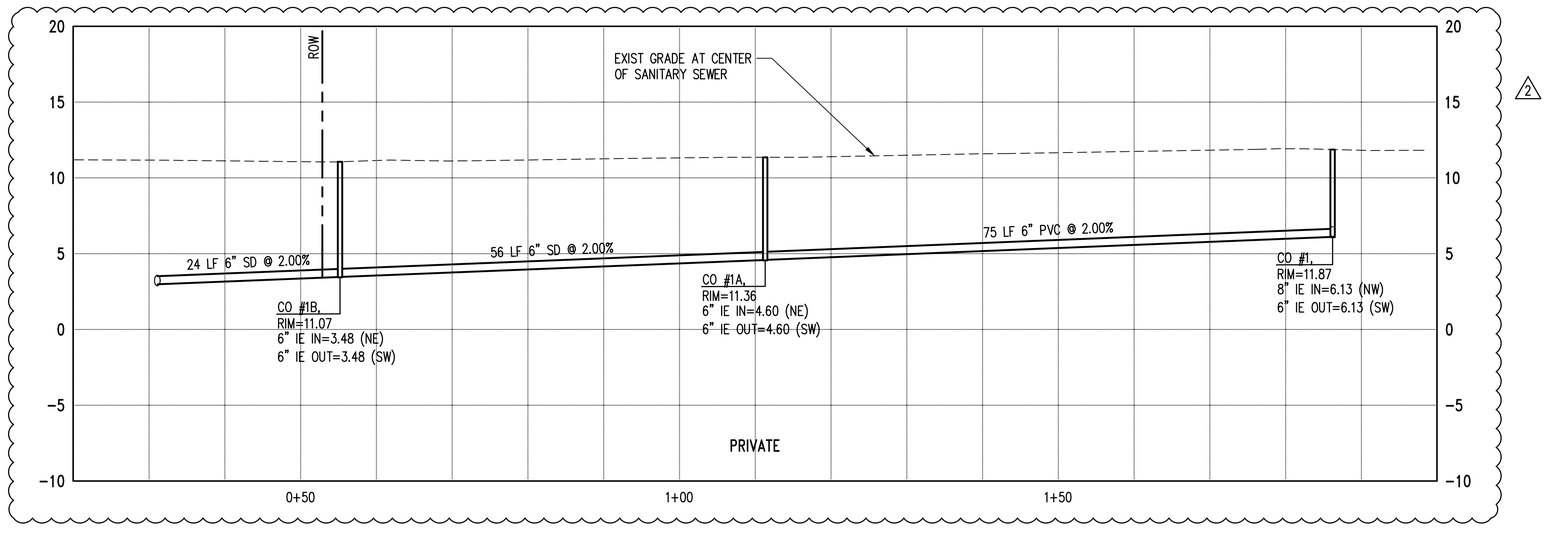
ALBERTO G. CISNEROS, STATE OF WASHINGTON, 32120 REGISTERED PROFESSIONAL ENGINEER, 11.12.19

CITY OF TACOMA
DEPARTMENT OF PUBLIC WORKS
SITE AND BUILDING DIVISION

City of Tacoma Fire Station #5
E 11TH STREET
SIDEWALK, DRIVEWAYS AND SERVICES

WORK ORDER NO. W019-0157
KPFF NO. 1900060
SHEET NO. WO-5
SHEET 5 OF 9





0 5 10 20
1 inch = 10 ft. HORZ

0 2.5 5 10
1 inch = 5 ft. VERT

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NO	REVISION	DATE	APPD
2	ADDENDUM #2	11.12.19	

FINAL CONSTRUCTION CHECKED
BY
DATE
FIELD BOOKS

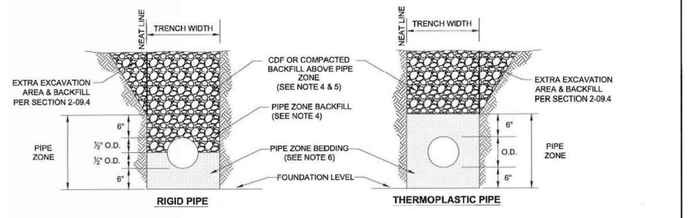
DATE 11.12.19 | SCALE AS NOTED
DESIGNED AGC | CHECKED AGC
DRAWN TAD | PROJECT NAME FIRE STATION #5
DRAWING NAME SANITARY SEWER PLAN AND PROFILE

REGISTERED PROFESSIONAL ENGINEER
STATE OF WASHINGTON
32120
11.12.19

CITY OF TACOMA
DEPARTMENT OF PUBLIC WORKS
SITE AND BUILDING DIVISION

City of Tacoma Fire Station #5
E 11TH STREET
SANITARY SEWER PLAN AND PROFILE

WORK ORDER NO. W019-0157
KPFF NO. 1900060
SHEET NO. WO-6 2
SHEET 6 OF 9

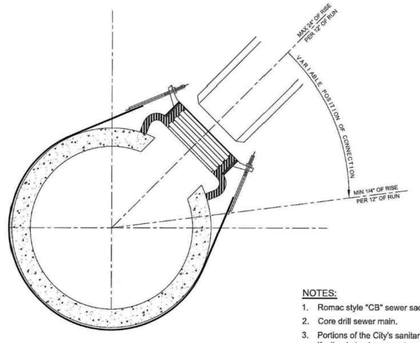


NOTES:

1. Provide uniform support under barrel and provide pockets in bedding for pipe bells.
2. Hand tamp under haunches.
3. Trench width shall be as specified in Section 2-09.4 of the WSDOT Standard Specifications.
4. Pipe zone backfill and backfill above pipe zone shall meet the material requirements of WSDOT Standard Specification Section 9-03.12(2) for gravel backfill for walls.
5. All trenches shall be compacted in accordance with SU-28.
6. Pipe zone bedding shall meet the material requirements of WSDOT Standard Specification Section 9-03.9(3) for crushed surfacing top course.

REVIEWED BY			APPROVED FOR PUBLICATION	CITY OF TACOMA PIPE ZONE BEDDING AND BACKFILL FOR SANITARY AND STORM SEWERS
DCS PUBLIC WORKS	GMS ENVIRONMENTAL SERVICES		8/16/16 CITY ENGINEER DATE	STANDARD PLAN NO. SU-16
NA TACOMA POWER	NA TACOMA WATER			

2

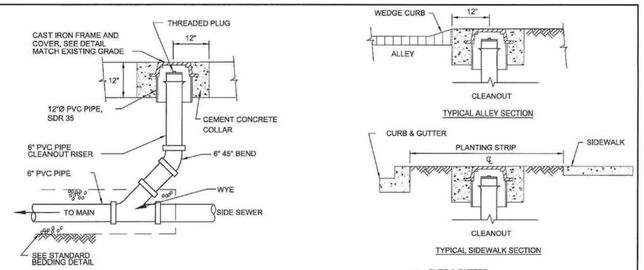


SANITARY SEWER MAIN
CROSS SECTION

NOTES:

1. Romac style "CB" sewer saddle or approved equal.
2. Core drill sewer main.
3. Portions of the City's sanitary sewer system have been lined. If a lined pipe is encountered during connection of the new side sewer, the Construction Division shall be contacted at (253) 591-5760 for further instructions.
4. Sewer laterals shall not extend beyond the interior wall of the sanitary sewer main.

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION CITY ENGINEER 12 Jan 2009 DATE	LATERAL SEWER CONNECTION TO SANITARY SEWER MAIN STANDARD PLAN NO. SU-23



CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION CITY ENGINEER 12 Jan 2009 DATE	SIDE SEWER CLEANOUT AND COVER DETAIL STANDARD PLAN NO. SU-24

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2	ADDENDUM #2	11.12.19	

FINAL CONSTRUCTION CHECKED BY DATE
FIELD BOOKS

DATE 11.12.19 | SCALE AS NOTED
DESIGNED AGC | CHECKED AGC
DRAWN TAD | PROJECT NAME FIRE STATION #5
DRAWING NAME PAVING DETAILS

ALBERT G. CISNEROS STATE OF WASHINGTON 32120 REGISTERED PROFESSIONAL ENGINEER 11.12.19

SITE AND BUILDING DIVISION

CITY OF TACOMA
DEPARTMENT OF PUBLIC WORKS

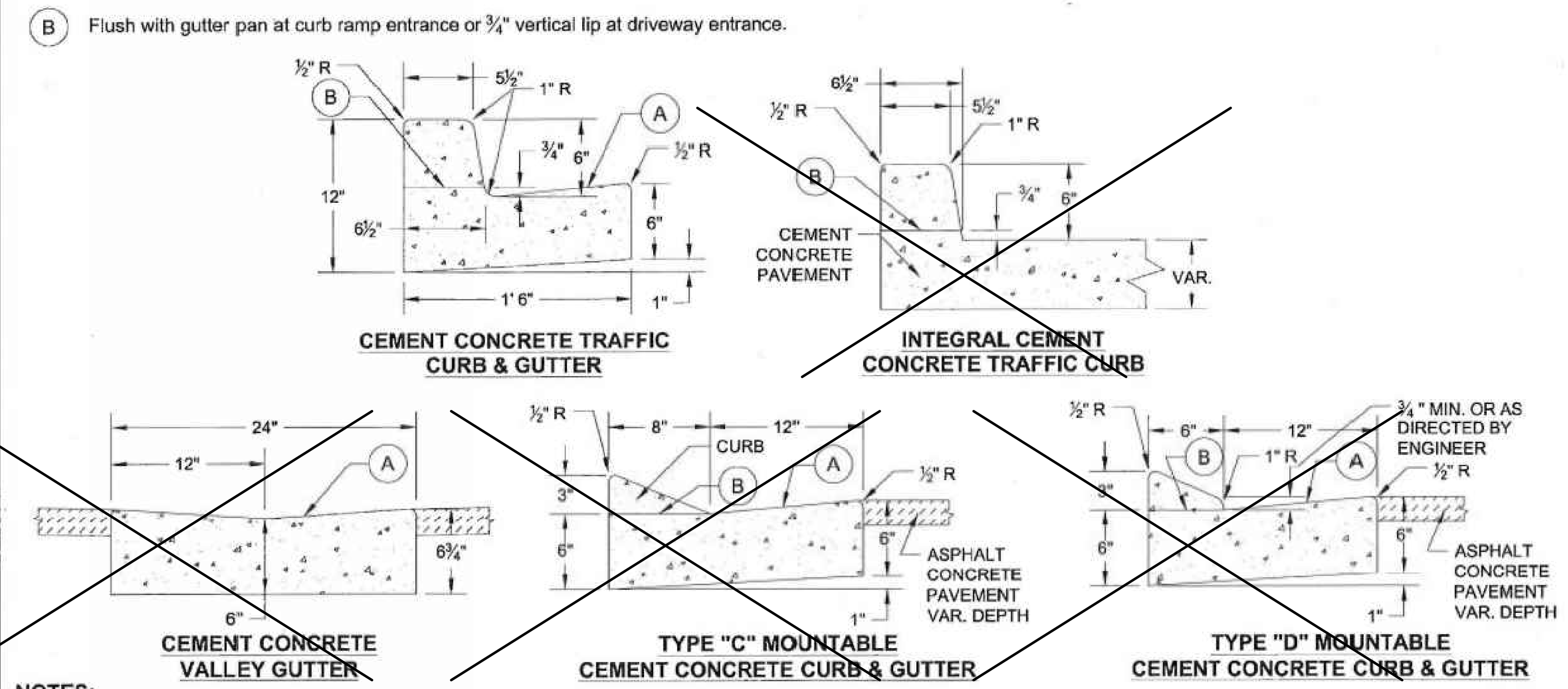
City of Tacoma Fire Station #5
E 11TH STREET
SANITARY SEWER DETAILS

WORK ORDER NO. W019-0157
KPFF NO. 1900060
SHEET NO. WO-7 2
SHEET 7 OF 9

NOTES:

(A) When used on high side of roadways, the cross slope of the gutter shall match the cross slope of the adjacent pavement. The height of the curb shall be 6", unless otherwise shown on plans.

(B) Flush with gutter pan at curb ramp entrance or ¾" vertical lip at driveway entrance.



NOTES:
1. For trench crossings, curb and gutter shall be removed to a minimum 2' cut back over undisturbed soil.
2. In all projects, any remaining sections of curb and gutter less than 5' in length between the project area and the nearest control joint shall also be removed and replaced.
3. All joints shall be saw cut full depth prior to restoration and ⅜" expansion joint installed.
4. Concrete finish shall match existing.
5. Cutting wheel run-out beyond the limits of the opening shall be filled in accordance with WSDOT Standard Specification 5-05.3(8)B for cement concrete surfaces and 5-04.3(5)C for asphalt concrete surfaces.
6. Foundations shall be fully compacted prior to form placement.
7. Unsuitable foundation shall be replaced with ⅝" crushed surfacing top course.

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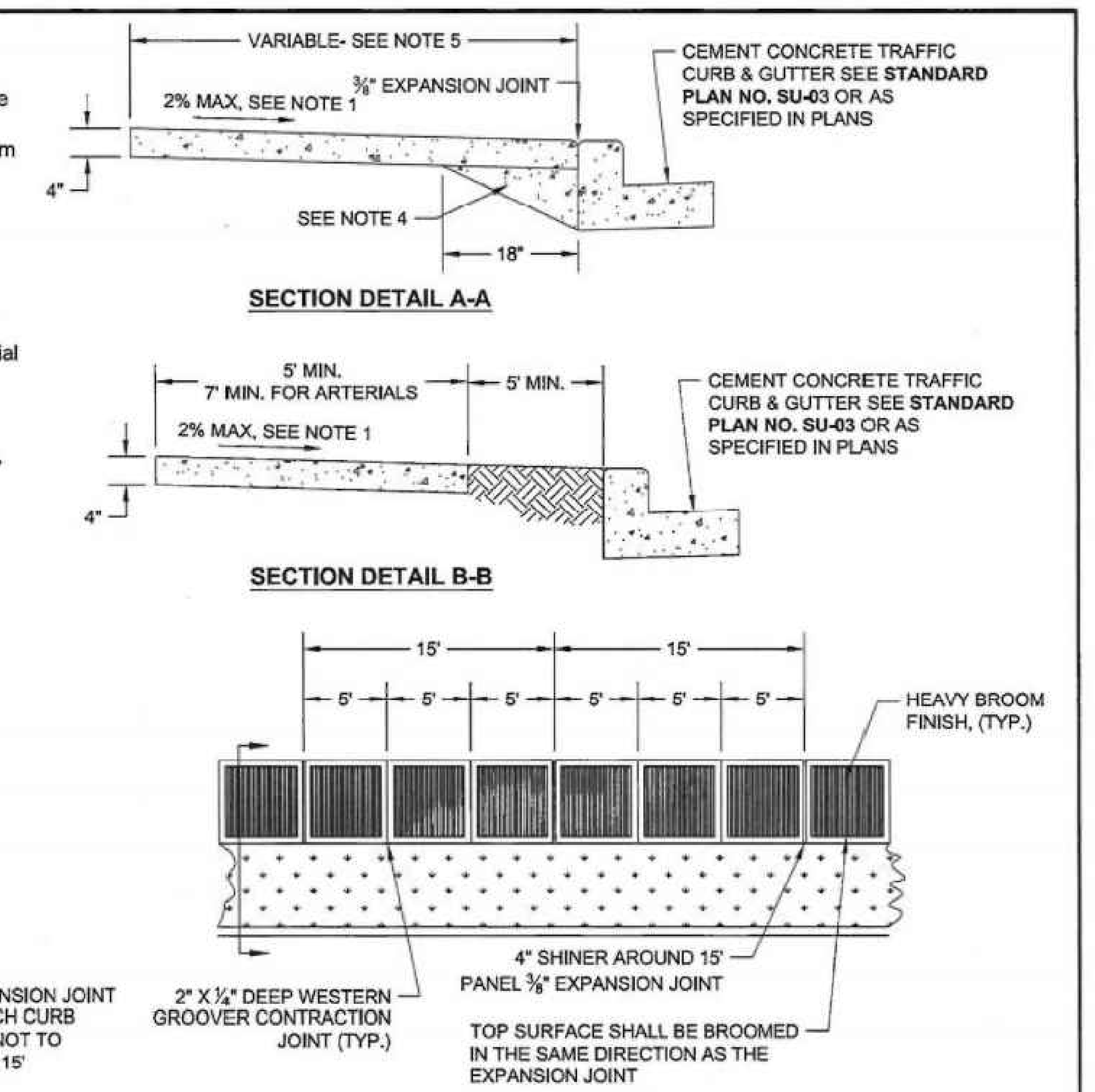
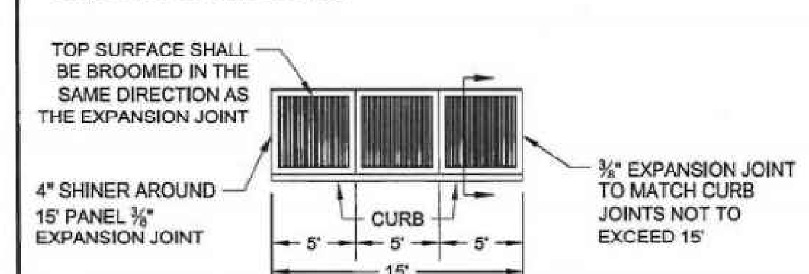
DCS PUBLIC WORKS	GMS ENVIRONMENTAL SERVICES	KURTIS DEAN KINGSOLVER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER	[illegible] 8/16/16	CEMENT CONCRETE CURB AND GUTTER
NA TACOMA POWER	NA TACOMA WATER		CITY ENGINEER DATE	STANDARD PLAN NO. SU-03

NOTES:
1. Sidewalks shall be designed and constructed in accordance with 2010 ADA Standards, 28 CFR, Part 35 and as supplemented by the Public Right of Way Accessibility Guidelines (PROWAG). City of Tacoma prefers sidewalk cross slopes to be designed to a maximum of 1.5% and a minimum of 1.0%
2. When placing walk adjacent to existing curb and gutter, curb and gutter will be repaired as necessary before placing concrete forms for walk.
3. Staking is required where no curb is present.
4. Thickened edge shall be constructed using cement concrete on all radii. All other locations shall be backfilled and compacted.
5. Combination walk shall be 7' min. on all commercial sites and arterial streets. Combination walk shall be a minimum of 5' on non arterial streets. Dimensions are from back of curb to back of walk. See contract plans for width and placement of sidewalk.
6. All expansion joints shall be full depth with ⅜" premolded joint filler.
7. All joints shall be cleaned and edged. External edges shall be ½" radius. Internal joints shall be ¼" radius.
8. All soft and yielding foundation material shall be removed and replaced with crushed surfacing top course (CSTC) per Section 9-03.9(3) of the WSDOT Standard Specifications.
9. All sidewalk shall be replaced to the nearest expansion or contraction joint. All joints shall be saw cut full depth prior to restoration and ⅜" expansion joint installed. Cutting wheel run-out beyond the limits of the opening shall be filled in accordance with WSDOT Standard Specification 5-05.3(8)B for cement concrete surfaces and 5-04.3(5)C for asphalt concrete surfaces.
10. For sidewalks within the North Slope Historical District area use Standard Plan HD-NS03. See Standard Plan HD-NS01 for North Slope Historic District site map.





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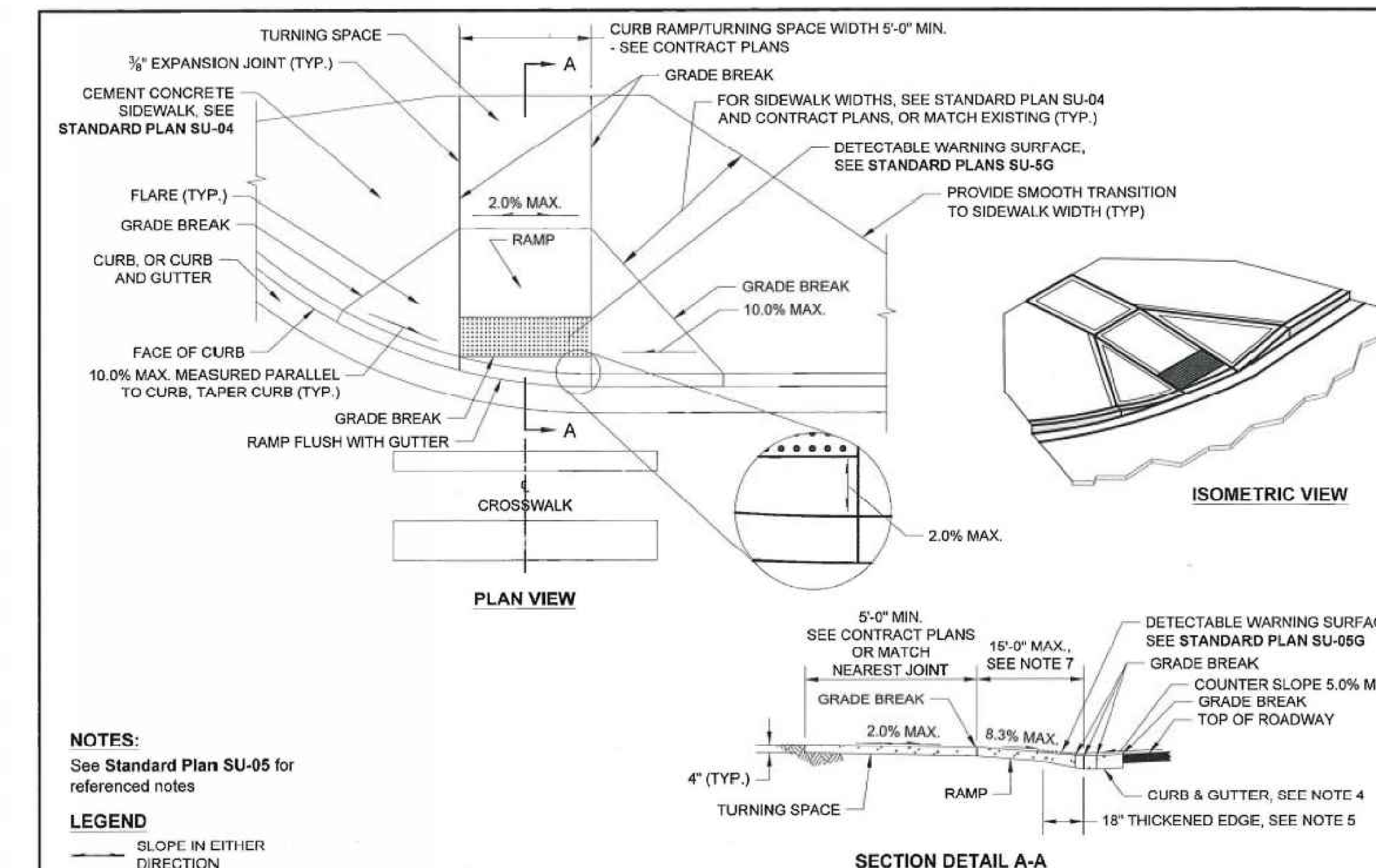
DCS PUBLIC WORKS	GMS ENVIRONMENTAL SERVICES	KURTIS DEAN KINGSOLVER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER	[illegible] 4/25/17	CEMENT CONCRETE SIDEWALK
N/A TACOMA POWER	N/A TACOMA WATER		CITY ENGINEER DATE	STANDARD PLAN NO. SU-04



NOTES:
See **Standard Plan SU-05** for referenced notes

LEGEND
SLOPE IN EITHER DIRECTION

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DCS PUBLIC WORKS	GMS ENVIRONMENTAL SERVICES	KURTIS DEAN KINGSOLVER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER	[illegible] 8/16/16	PERPENDICULAR CURB RAMP TYPE 'A'
NA TACOMA POWER	NA TACOMA WATER		CITY ENGINEER DATE	STANDARD PLAN NO. SU-05A

△2

NOTES:
1. Use the following as a guide of when each Entrance or Access Type should be used:
   1.a. Cement Concrete Driveway Entrances Type 1 (Entrances) or Accesses Type 1 (Accesses) shall be used at driveways where the planting strip width is 5' or greater.
   1.b. Cement Concrete Driveway Entrances Type 2 (Entrances) or Access Type 2 (Accesses) shall be used at driveways and alleys where the planting strip is less than 5' wide.
   1.c. Cement Concrete Driveway Entrance Type 3 (Entrances) or Accesses Type 3 (Accesses) shall be used at alleys where the planting strip is 5' wide or greater.
2. Standard Concrete shall be a minimum compressive strength of 3,000 PSI.
3. Concrete Joints:
   3.a. All joints shall be cleaned & edged.
   3.b. All expansion or isolation joints shall be full depth.
   3.c. External joints to the driveway shall be 1/2" radius. Internal joints to the driveway shall be 1/4" radius.
   3.d. All joints shall be saw cut full depth prior to restoration and 3/8" expansion joint installed. Cutting wheel run-out beyond the limits of the opening shall be filled in accordance with WSDOT Standard Specification 5-05.3(8)B for cement concrete surfaces and 5-04.3(5)C for asphalt concrete surfaces.
4. Entrances and Accesses wider or narrower than shown on this plan require approval of the Director of Public Works.
5. Entrances and Accesses shall have a brushed finish in a transverse direction to the center line of Entrance or Access.
6. Entrances or Accesses wider than 20' require a center line expansion joint.
7. When trenching through an Entrance or Access:
   7.a. If Entrance or Access is 20' or less in width, full replacement is required.
   7.b. If Entrance or Access is greater than 20' in width, a minimum 2' wide cut back over undisturbed soil is required and replacement shall extend to the nearest control joint.
8. Transition panel from new Entrance or Access to sidewalk shall be a minimum of 5 feet.
9. For Entrances or Accesses within the North Slope Historical District area use Standard Plan HD-NS02. See Standard Plan HD-NS01 for map of Historical District area limits.
10. Permeable surfacing may be allowed for Entrances or Accesses. Refer to Standard Plans PD-01 and PD-02 as applicable. Do not compact subgrade for permeable surfacing and refer to APWA GSP 2-06.3(3) Subgrade for Permeable Pavements. A soils report is required and modeling may be necessary per SWMM BMP L633.
11. Geomembrane barrier required between standard and permeable sections. Refer to City of Tacoma Standard Plan GSI-18.
12. Refer to Tacoma Municipal Code 10.14, driveways for additional information.
13. A 2" Ø PVC Sch. 80 Pipe with capped ends shall be installed as shown, per TMC 10.14.070. Pipe shall be buried 24 inches below finished grade and have a pull string and location wire per WSDOT 9-29.3(2)A4.
14. Detectable Warning Surface shall be placed at alleys if the ADT is greater than 700, in the downtown area, located near a high pedestrian volume area, or where there are sight distance concerns. The detectable warning pattern, if needed, shall be placed the full width of the sidewalk in accordance with City of Tacoma Standard Plan SU-05A.
15. When an existing entrance or access does not meet current ADA standards as defined by the City of Tacoma's Design Manual, the entire entrance or access shall be replaced to current ADA standards.

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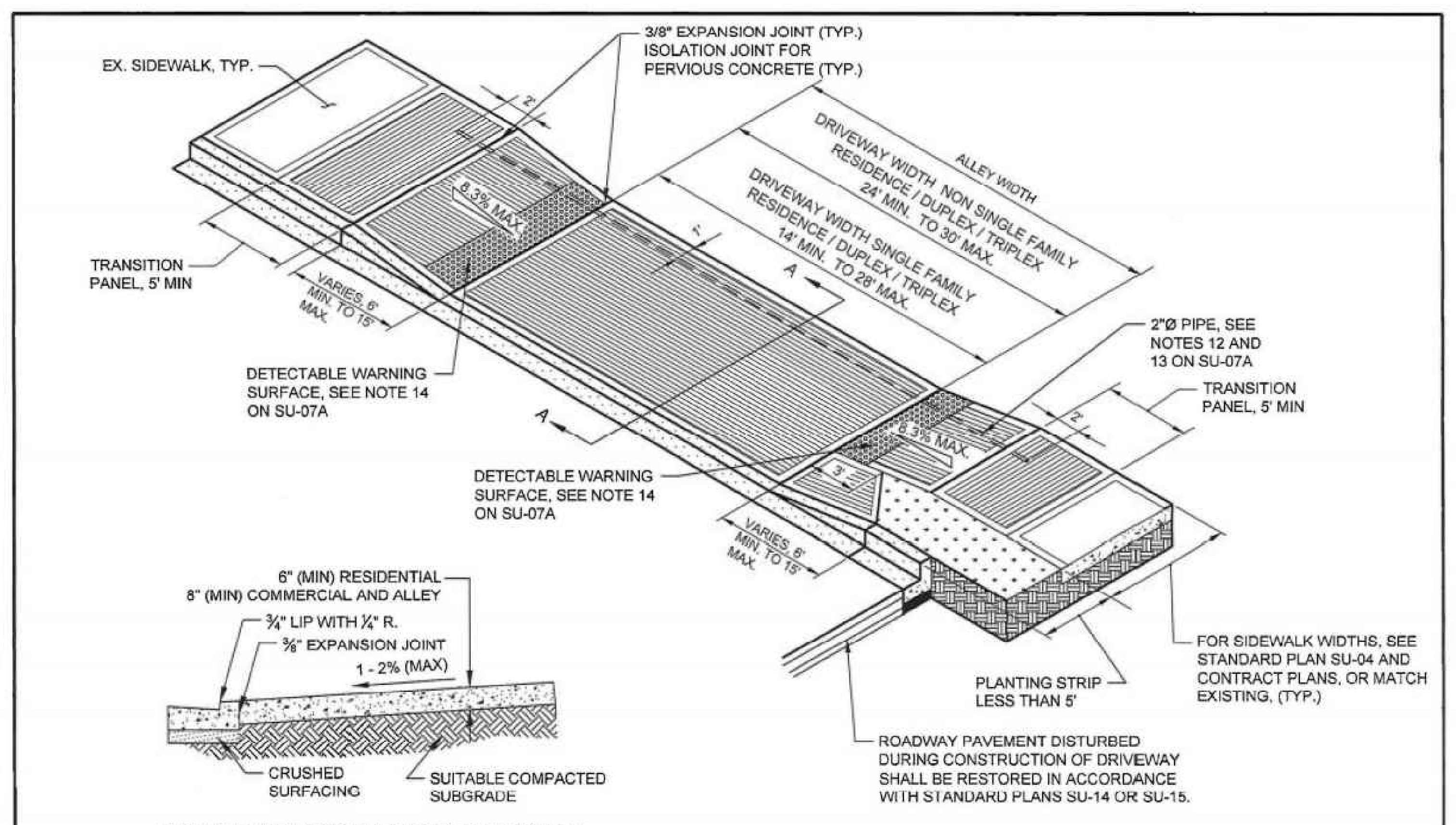
DCS PUBLIC WORKS	GMS ENVIRONMENTAL SERVICES	KURTIS DEAN KINGSOLVER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER	[illegible] 8/22/17	CEMENT CONCRETE DRIVEWAY ENTRANCE AND ACCESS TYPE 1
N/A TACOMA POWER	N/A TACOMA WATER		CITY ENGINEER DATE	STANDARD PLAN NO. SU-07A



NOTE: DESIGNED SECTION REQUIRED FOR PERMEABLE SURFACING. SEE NOTES 10 AND 11 ON SU-07A.

STANDARD CONCRETE SECTION DETAIL A-A
NTS

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DCS PUBLIC WORKS	GMS ENVIRONMENTAL SERVICES	KURTIS DEAN KINGSOLVER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER	[illegible] 8/22/17	CEMENT CONCRETE DRIVEWAY ENTRANCE AND ACCESS TYPE 2
N/A TACOMA POWER	N/A TACOMA WATER		CITY ENGINEER DATE	STANDARD PLAN NO. SU-08

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FINAL CONSTRUCTION CHECKED	DATE 11.12.19	SCALE AS NOTED
BY	DESIGNED AGC	CHECKED AGC
DATE	DRAWN TAD	PROJECT NAME FIRE STATION #5
FIELD BOOKS	DRAWING NAME PAVING DETAILS	

ROBERTO G. CISNEROS STATE OF WASHINGTON 32120 REGISTERED PROFESSIONAL ENGINEER 11.12.19

CITY OF TACOMA
DEPARTMENT OF PUBLIC WORKS
SITE AND BUILDING DIVISION

City of Tacoma Fire Station #5
E 11TH STREET
STREET IMPROVEMENTS - STANDARD PLANS

WORK ORDER NO. W019-0157
KPFF NO. 1900060
SHEET NO. WO-8 △2
SHEET 8 OF 9

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ARCHITECTURAL

SPECIFICATIONS:

SECTION 07 41 13 METAL ROOF PANELS:

REVISE: 1.07 WARRANTY, Paragraph B. Finish Warranty

Replace paragraph B as follows:

B. Finish Warranty: Provide Manufacturer's 20-year Marine Warranty, stating the following:

1. Architectural Polyvinylidine Fluoride finish:
   a. Will be free of fading or color change in excess of 5 Hunter delta-E units as determined by ASTM D2244-02.
   b. Will not chalk in excess of numerical rating of 8 when measured in accordance with standard procedures specified in ASTM D4214-98 method D659.
   c. Will not peel, crack, chip, or delaminate.

REVISE: 2.05 FINISHES, Paragraph A. Fluoropolymer Coating System

Replace paragraph A as follows:

A. Fluoropolymer Coating System: Manufacturer's multi-coat thermocured coating system; color and gloss as selected from manufacturer's standards.

1. Dura Tech 5000/mx Marine 20-Year: Polyvinylidine Fluoride, full 70 percent Kynar 500 or Hylar 5000, consisting of a baked-on 0.70-0.80 mil corrosion resistant primer, a baked-on 0.70-0.80 mil finish coat and a baked-on 0.40-0.50 clear coat with a specular gloss of 15 to 25% when tested in accordance with ASTM D523 at 60 degrees.

SECTION 07 46 19 STEEL SIDING

REVISE: 1.07 WARRANTY, Paragraph B. Finish Warranty

Replace paragraph B as follows:

B. Finish Warranty on Siding and Trim Accessories: Provide Manufacturer's 20-year Marine Warranty, stating the following:

1. Architectural Polyvinylidine Fluoride finish:
   a. Will be free of fading or color change in excess of 5 Hunter delta-E units as determined by ASTM D2244-02.
   b. Will not chalk in excess of numerical rating of 8 when measured in accordance with standard procedures specified in ASTM D4214-98 method D659.
   c. Will not peel, crack, chip, or delaminate.

REVISE: 2.02 STEEL SIDING, Paragraph A. Horizontal Steel Siding

Replace item 4 as follows:

4. Fluoropolymer Coating System: Dura Tech 5000/mx Marine 20-Year: Polyvinylidine Fluoride, full 70 percent Kynar 500 or Hylar 5000, consisting of a baked-on 0.70-0.80 mil corrosion resistant primer, a baked-on 0.70-0.80 mil finish coat and a baked-on 0.40-0.50 clear coat with a specular gloss of 15 to 25% when tested in accordance with ASTM D523 at 60 degrees.

SECTION 07 62 00 SHEET METAL FLASHING AND TRIM

ADD: Paragraph 1.07 WARRANTY as follows:

1.07 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Finish Warranty: Provide Manufacturer's 20-year Marine Warranty, stating the following:

1. Architectural Polyvinylidine Fluoride finish:
    a. Will be free of fading or color change in excess of 5 Hunter delta-E units as determined by ASTM D2244-02.
    b. Will not chalk in excess of numerical rating of 8 when measured in accordance with standard procedures specified in ASTM D4214-98 method D659.
    c. Will not peel, crack, chip, or delaminate.

REVISE: 2.01 SHEET MATERIALS, Paragraph A. Precoated Steel Sheet

Replace item 3 as follows:

3. Match Siding Fluoropolymer Coating System: Dura Tech 5000/mx Marine 20-Year: Polyvinylidine Fluoride, full 70 percent Kynar 500 or Hylar 5000, consisting of a baked-on 0.70-0.80 mil corrosion resistant primer, a baked-on 0.70-0.80 mil finish coat and a baked-on 0.40-0.50 clear coat with a specular gloss of 15 to 25% when tested in accordance with ASTM D523 at 60 degrees.

SECTION 08 11 13 HOLLOW METAL DOORS AND FRAMES

ADD: the following:

2.03 Hollow Metal Doors

C. Exterior Doors: Thermally insulated.
    1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
        a. Level 3 - Extra Heavy-duty.
        b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
        c. Model 1 - Full Flush.
        d. Door Face Metal Thickness: 16 gage, 0.053 inch (1.3 mm), minimum.
        e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
    2. Core Material: Polyurethane, 1.8 lbs/cu ft minimum density.
    3. Door and Frame Thermal Envelope Assembly: U-Value of 0.37 maximum; area weighted average. Door assemblies shall be tested in accordance with NFRC 100.
    4. Door Thickness: 1-3/4 inch (44.5 mm), nominal.
    5. Weatherstripping: Refer to Section 08 71 00.

2.04 Hollow Metal Frames

H. Exterior Door Frames: Full profile/continuously welded type.
    1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
    2. Frame Metal Thickness: 14 gage, 0.067 inch (1.7 mm), minimum.
    3. Weatherstripping: Separate, see Section 08 71 00.
    4. Door and Frame Thermal Envelope Assembly: U-Value of 0.37 Maximum; area weighted average. Door assemblies shall be tested in accordance with NFRC 100.

I. Fire Rated Frames:
    1. Fire Rating: As indicated on Door Schedule, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
    2. Provide units listed and labeled by UL (DIR) or ITS (DIR).
        a. Attach fire rating label to each fire rated unit.

SECTION 09 61 13 SLIP RESISTANT FLOOR TREATMENT & PAVEMENT MARKING:

ADD: Apparatus Bay Striping Plan as shown on Addendum Drawing SKA-8.

DRAWINGS:

SHEET A2-1 FLOOR PLAN

ADD: RPBA in the Apparatus Bay as shown on Addendum drawing SKA-4.

SHEET A2-3 REFLECTED CEILING PLAN

ADD: Detail to clarify termination of fire rated chase as shown on Addendum drawings SKA-5 and SKA-6

SHEET A7-1 INTERIOR DETAILS

REVISE: Details 1 & 7 for wall detail changes as shown on Addendum drawings SKA-7.

SHEET A8-1 EXTERIOR DETAILS

REVISE: Details 12 & 13 to add notes and revise downspout size as shown on Addendum drawings SKA-2 and SKA-3.

ADD: Detail 1 to clarify typical downspout bracket detailing as shown on Addendum drawing SKA-1.

SUBSTITUTION REQUEST APPROVALS:

The following products are approved for bidding subject to review and approval of Submittals and provided the Manufacturer meets all the requirements of the originally specified product. It shall be the initiator's responsibility to ensure that the proposed substitution is equal in every respect to the originally specified product, including but not limited to finish, size, weight, clearances, durability, maintenance, ease of operation, performance criteria, etc.

SECTION 07 41 13 METAL ROOF PANELS: Protecto Wrap – Jiffy Seal Ice and Water Guard HT

SECTION 07 41 13 METAL ROOF PANELS: Nu-Ray Metals – NRM-2200

*Product accepted subject to full compliance with contract documents, including revised warranty and finish requirements included in Addendum #2.

SECTION 07 41 13 METAL ROOF PANELS: The Bryer Company – Superseam

*Product accepted subject to full compliance with contract documents, including revised warranty and finish requirements included in Addendum #2.

SECTION 07 46 19 STEEL SIDING: Nu-Ray Metals – NRM-7000

*Product accepted subject to full compliance with contract documents, including revised warranty and finish requirements included in Addendum #2.

SECTION 07 46 19 STEEL SIDING: The Bryer Company – Flush Panel and V Rib 34

*Product accepted subject to full compliance with contract documents, including revised warranty and finish requirements included in Addendum #2.

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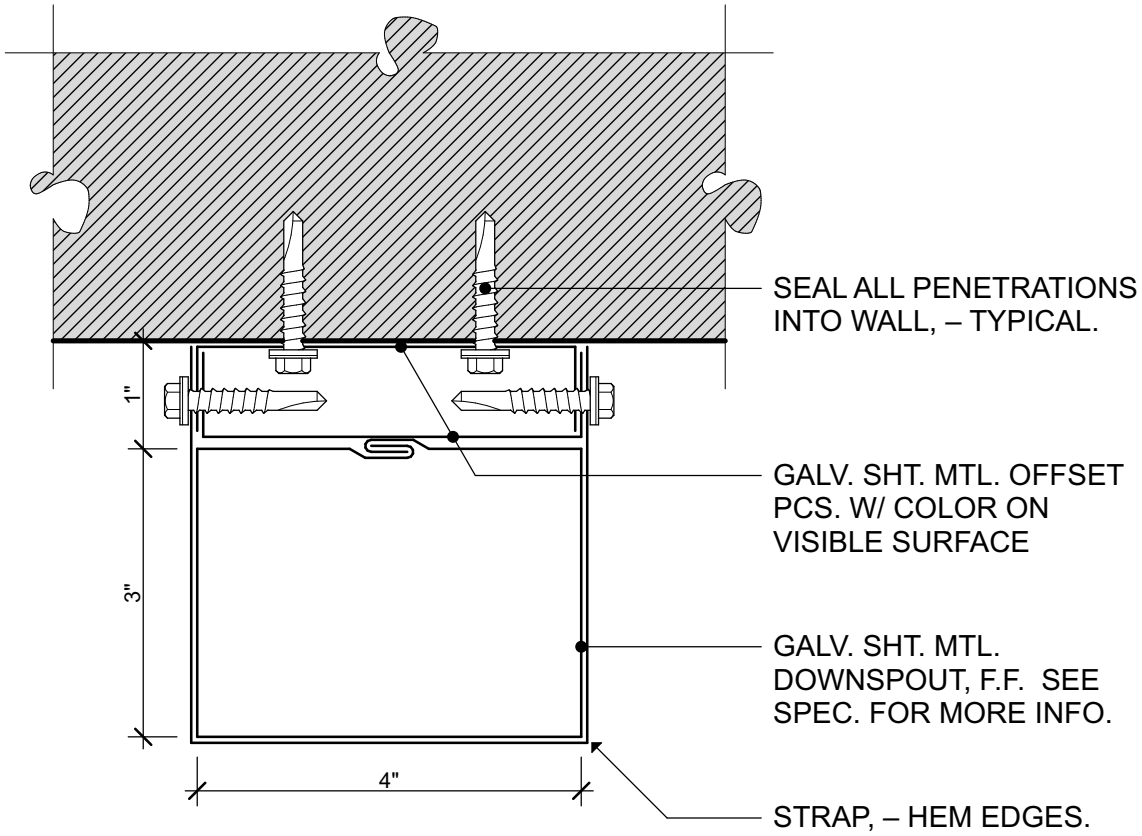

1 TYP. DOWNSPOUT BRACKET

6" = 1'-0"

Typical Downspout Bracket

REF: 2 11-12-19 — Addendum No. 2

11/12/19

City of Tacoma

SKA-1

Tacoma Fire Station #5

17-04

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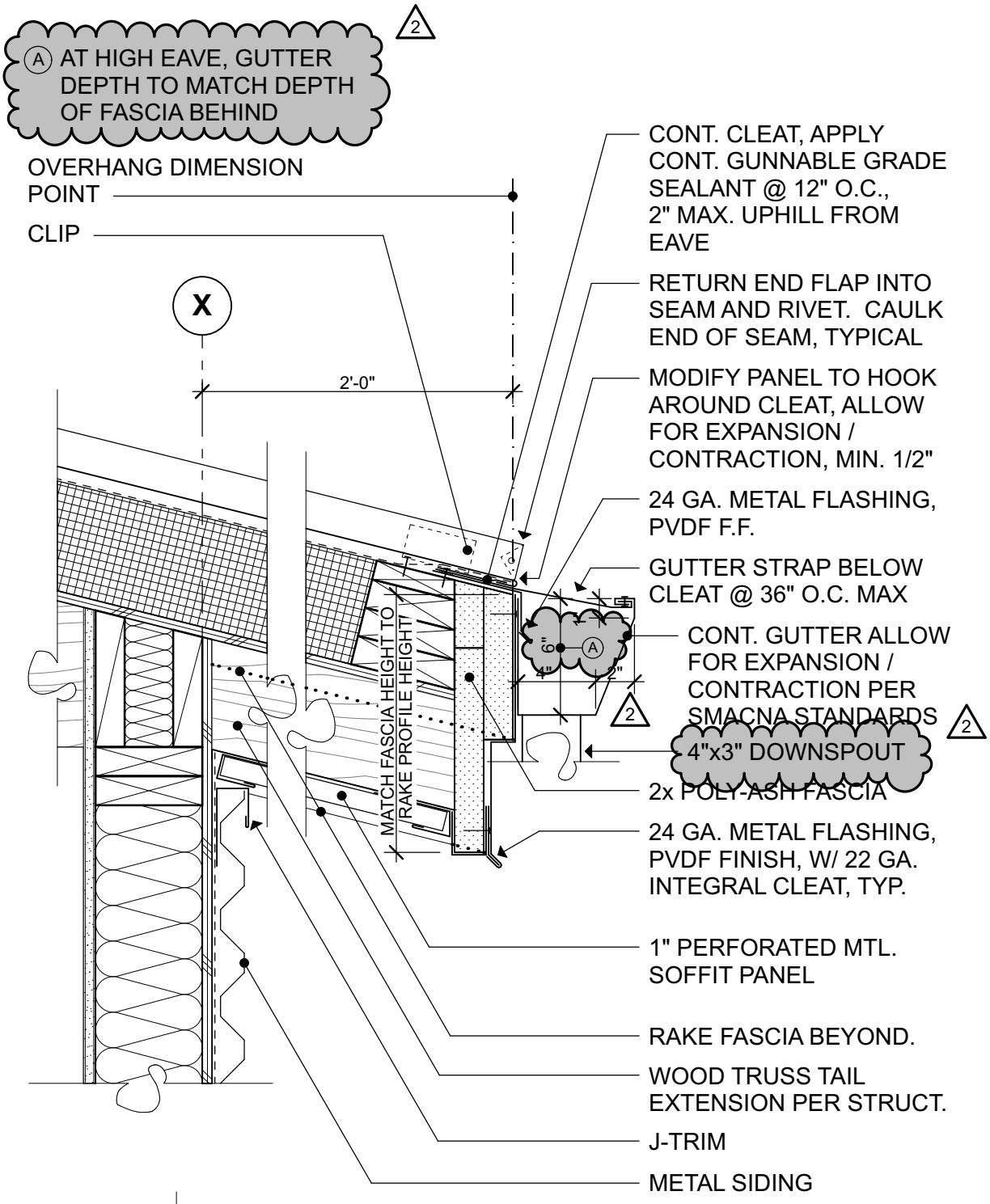

12 TYP. LOW EAVE

1 1/2"= 1'-0"

Typical Low Eave

REF: 2 11-12-19 — Addendum No. 2; 12/A8-1 Exterior Details

11/12/19

SKA-2

City of Tacoma

Tacoma Fire Station #5

17-04

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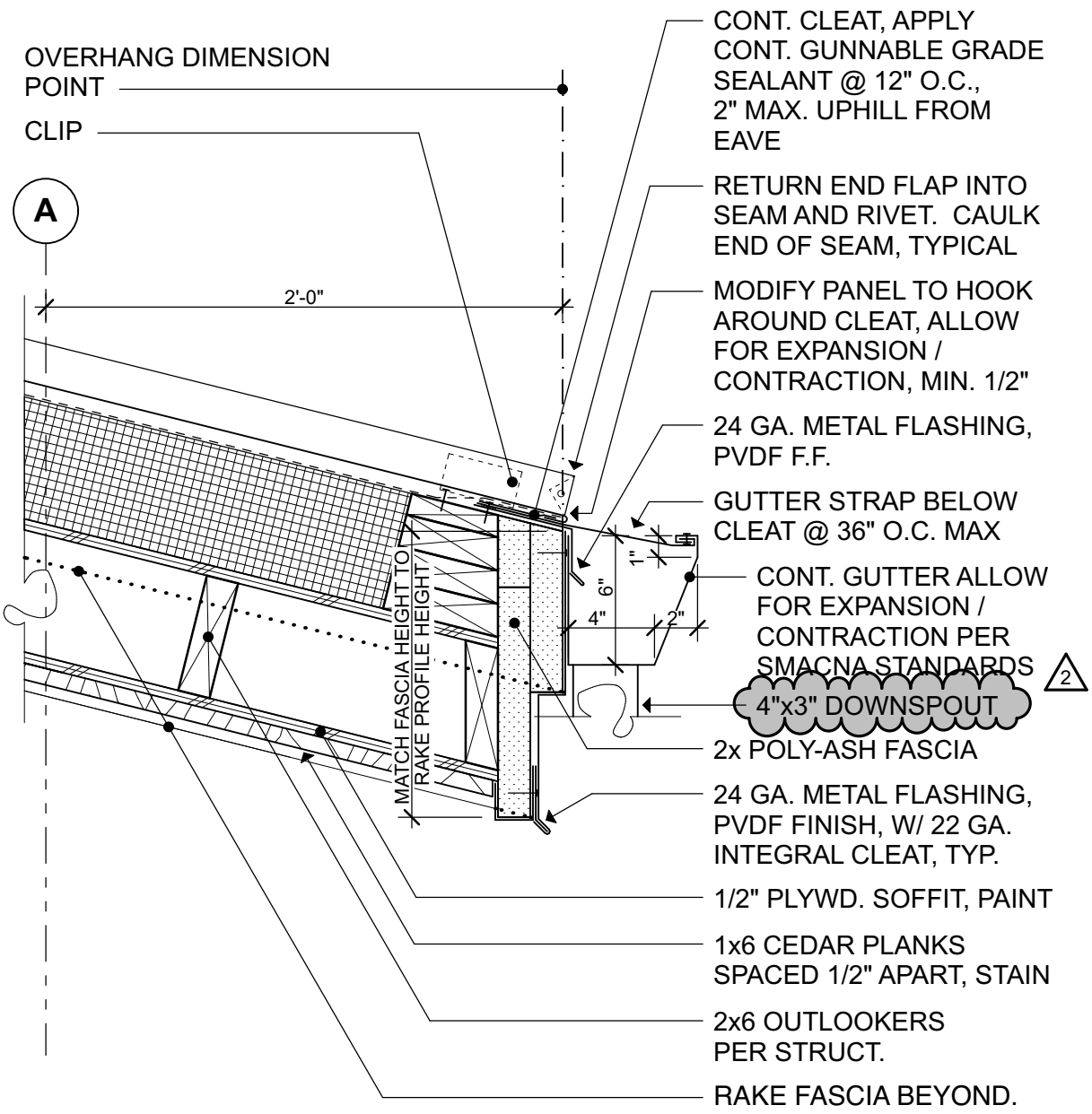

13 LOW EAVE AT ENTRY

1 1/2"= 1'-0"

Low Eave @ Entry

REF: 2 11-12-19 — Addendum No. 2; 13/A8-1 Exterior Details

11/12/19

SKA-3

City of Tacoma

Tacoma Fire Station #5

17-04

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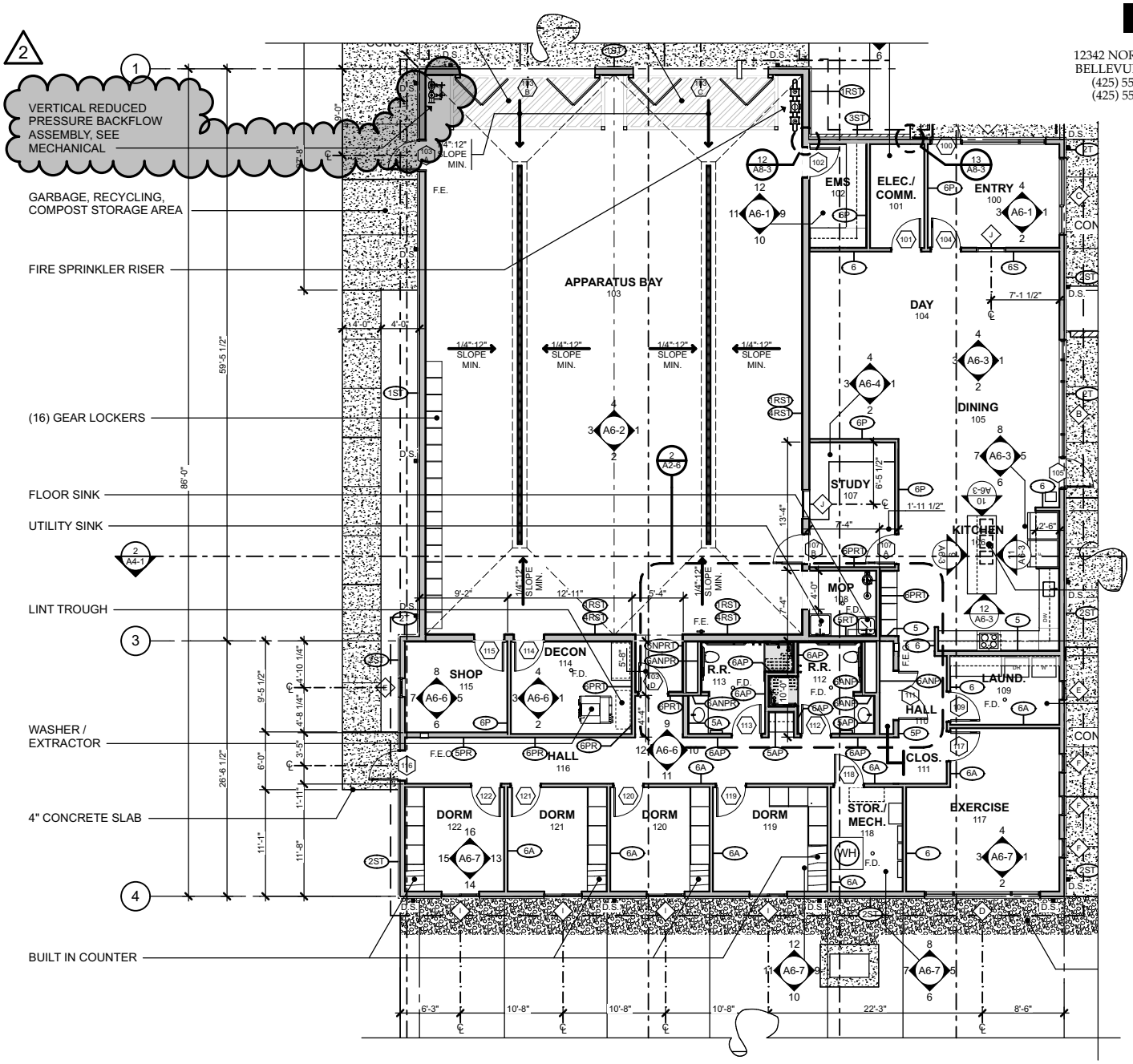
(425) 556-1228 -F



1 FLOOR PLAN

1/16" = 1'-0"

N

RPBA Assembly

REF: 2 11-12-19 — Addendum No. 2; 1 / A2-1 Floor Plan; MSK-01; MSK-02

11/12/19

SKA-4

City of Tacoma

Tacoma Fire Station #5

17-04

LAWHEAD
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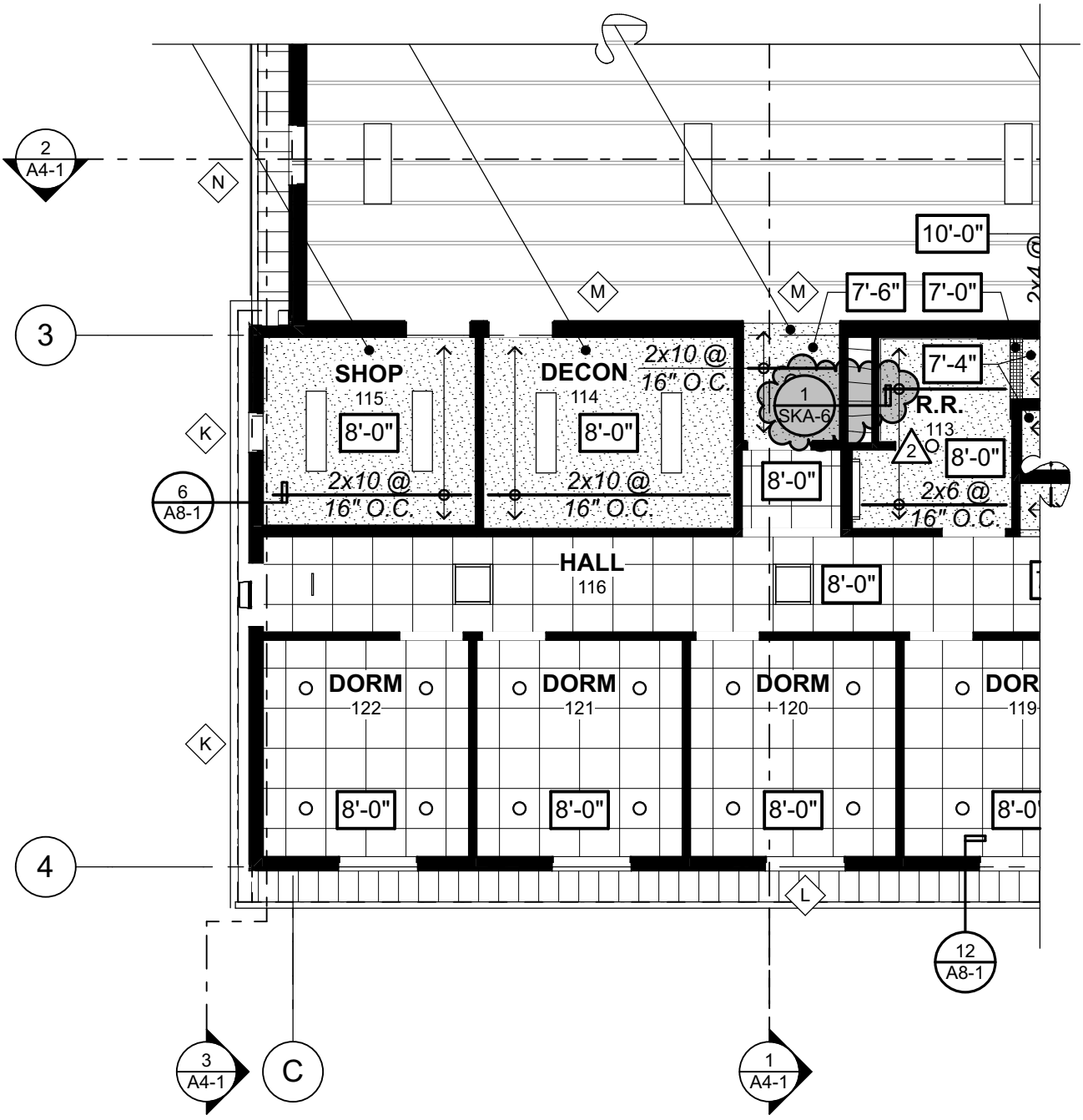
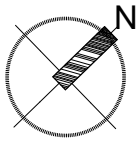
P.S.

12342 NORTHUP WAY
BELLEVUE, WA 98005
(425) 556-1220 -P
(425) 556-1228 -F



1 REFLECTED CEILING PLAN

1/8" = 1'-0"



Termination of Fire Rated Shaft

REF: ⚠2 11-12-19 — Addendum No. 2; 1/A2-3 Reflected Ceiling Plan; 1/SKA-6

11/12/19

City of Tacoma

SKA-5

Tacoma Fire Station #5

17-04

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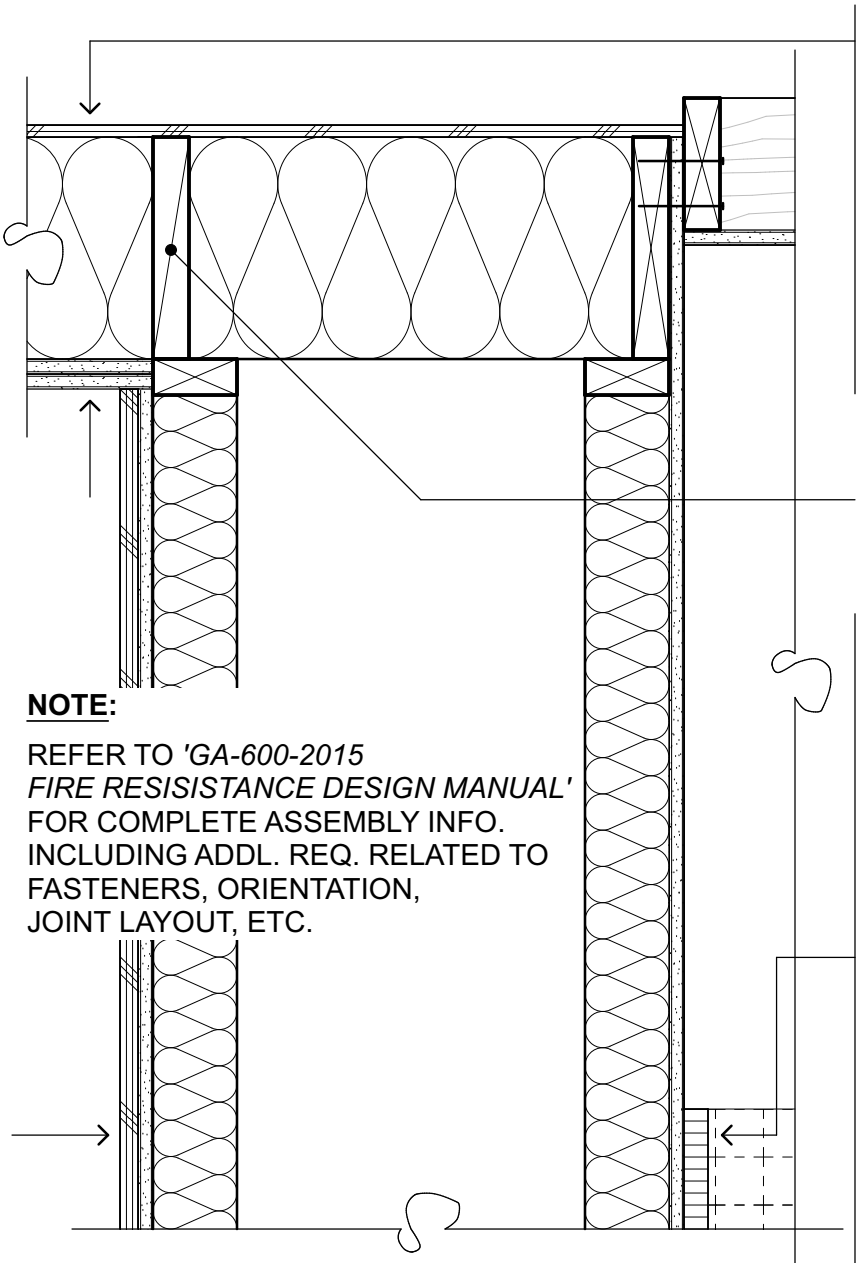

1-HR RATED CEILING:
(REF. GA FILE NO. FC 5529)

- 1/2" PLYWOOD;
- 2x10 JOISTS @ 16" O.C.;
- R-30 BATT INSUL.;
- (2) LAYERS OF 5/8" TYPE-X GWB, FINISH PER FINISH SCHEDULE;

CONTINUOUS FIREBLOCKING

1-HR RATED WALL:
(REF. GA FILE NO. WP 3370)

- CERAMIC TILE;
- GROUT;
- 5/8" TYPE-X WATER-RESISTIVE GWB;
- 2x4 WOOD STUDS @ 16" O.C.;
- ACOUSTIC INSUL.;
- AIR SPACE;
- 2x4 WOOD STUDS @ 16" O.C.;
- R-13 BATT INSUL.;
- 5/8" TYPE-X GWB;
- 3/4" PLYWD. WAINSCOT, FINISH PER FINISH SCHEDULE;

NOTE:

REFER TO *'GA-600-2015 FIRE RESISISTANCE DESIGN MANUAL'* FOR COMPLETE ASSEMBLY INFO. INCLUDING ADDL. REQ. RELATED TO FASTENERS, ORIENTATION, JOINT LAYOUT, ETC.

1 TERMINATION OF FIRE RATED CHASE

1 1/2"= 1'-0"

Termination of Fire Rated Shaft

REF: ⚠2 11-12-19 — Addendum No. 2; 1/SKA-5 Reflected Ceiling Plan;

11/12/19

SKA-6

City of Tacoma

Tacoma Fire Station #5

17-04

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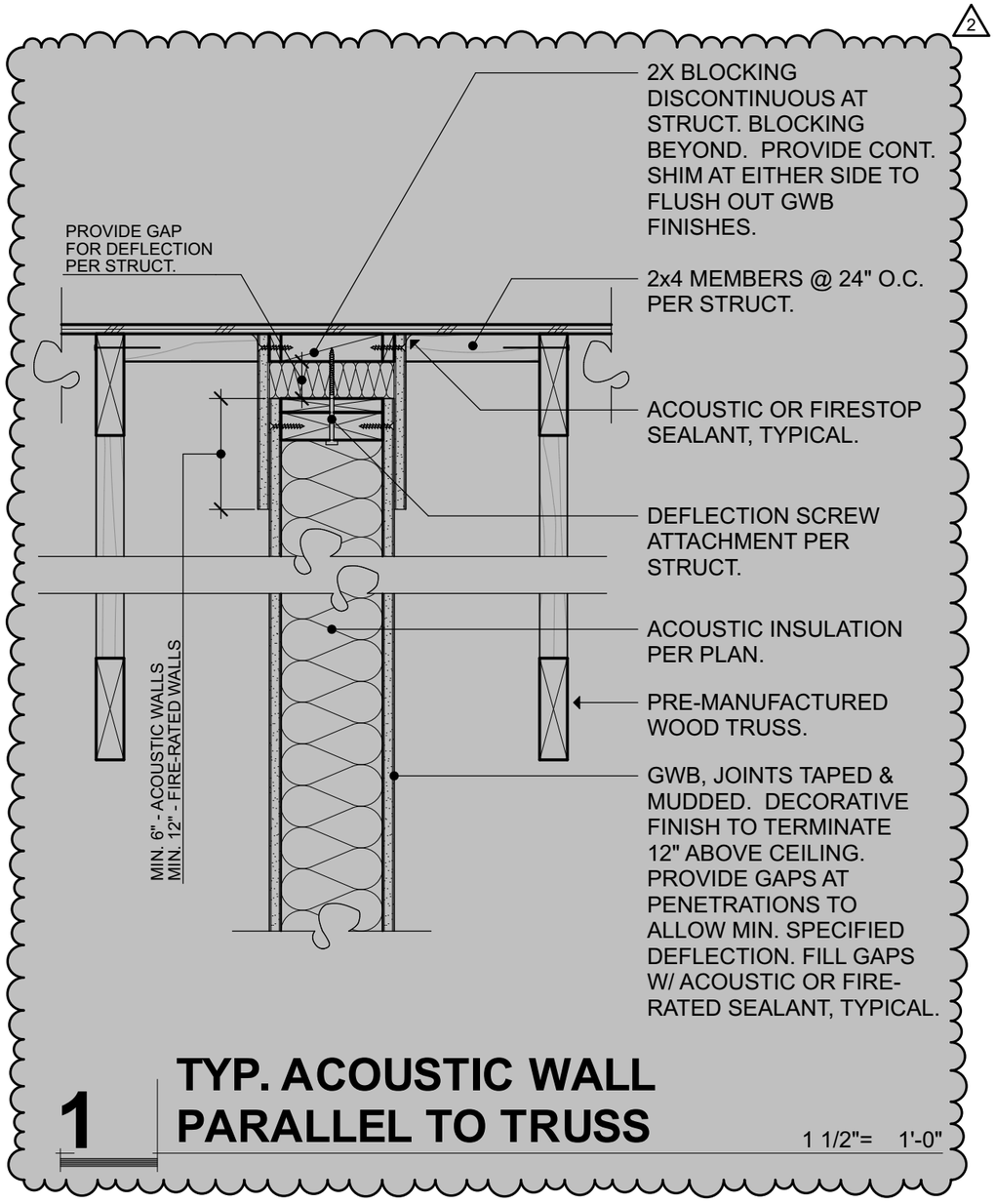
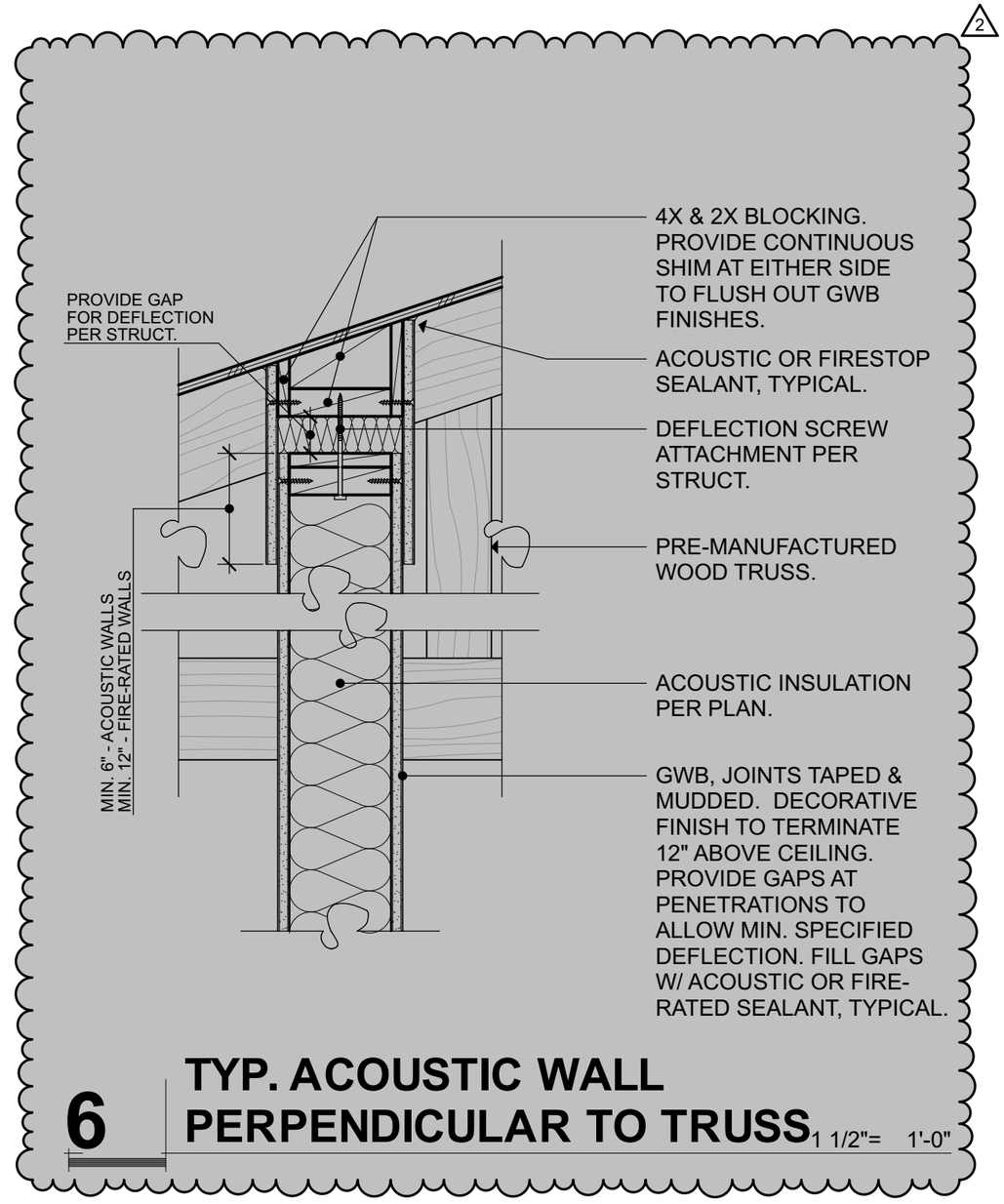
(425) 556-1228 -F



1 **TYP. ACOUSTIC WALL PARALLEL TO TRUSS** 1 1/2"= 1'-0"



6 **TYP. ACOUSTIC WALL PERPENDICULAR TO TRUSS** 1 1/2"= 1'-0"

Acoustic Wall Details

REF: 2 11-12-19 — Addendum No. 2; 1 & 6/A7-1 Interior Details; SSK-05

11/12/19

City of Tacoma

Tacoma Fire Station #5

17-04

SKA-7

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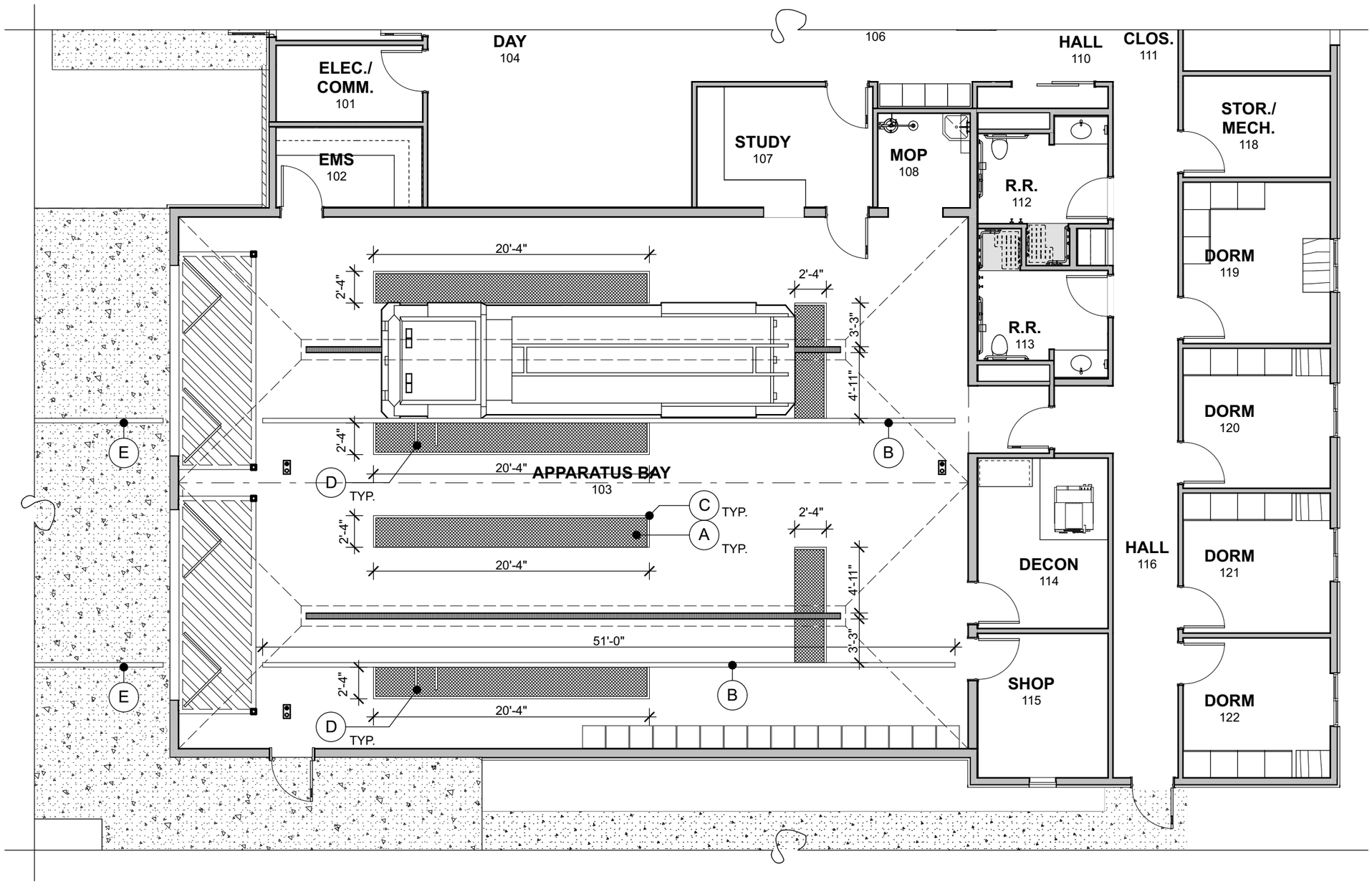

STRIPING LEGEND

- (A) 24" WIDE NON-SKID PADS
- (B) 4" WIDE INTERIOR BACKUP LINES
- (C) 4" WIDE NON-SKID PAD BORDER LINES
- (D) (2) 2" WIDE BY 20" LONG INTERIOR LINES AT FRONT WHEEL & DRIVER SIDE DOOR
- (E) 4" WIDE BY 20'-0" LONG PREFORMED THERMOPLASTIC PAVEMENT MARKINGS

Apparatus Bay Striping Plan

REF: 2 11-12-19 — Addendum No. 2; Specification Section 09 61 13

11/12/19

City of Tacoma

Tacoma Fire Station #5

17-04

SKA-8

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

Prospective bidders may request substitutions in writing on this form. Substitutions shall be submitted on this form via e-mail to:

Doreen Klaaskate, Senior Buyer.
E-mail address: dklaaskate@cityoftacoma.org

All e-mails must be received by **Noon on Wednesday, November 6th, 2019.** Where changes in the project documents are required, an addendum will be issued to everyone on the plan holder's list and posted on www.tacomapurchasing.org.

Submitted By

Signature _____

Company Protecto Wrap Company

Mailing Address 1955 S. Cherokee St.

City Denver State CO Zip 80223

Phone (303) 777-3001 Fax (303) 777-9273 E-mail Kyle@protectowrap.com

☒ Please check if there are attachments

1. We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Page	Line/Paragraph	Specified Item
074113	326	2.06 Part F	Underlayment / Ice and Water Shield

2. Proposed Substitution. Jiffy Seal Ice and Water Guard HT

3. Reason for Substitution. We would like to offer a high quality alternate material for the current list of specified materials.

4. Attach complete technical data, catalog cuts, drawings, samples, etc. Exact models and description of products shall be noted with any deviation noted.

5. Include complete information on changes to Drawings, and/or Specifications which proposed substitution will require for its proper installation. No changes should be needed to drawings

6. Does the substitute affect dimensions shown on Drawings? No effect

6a. If so, how? _____

7. Describe the effect substitution has on other trades. No effect

8. Describe differences between proposed substitution and specified item. Jiffy Seal Ice and Water Guard offers superior tensile strength, adhesive strength and elongation.

9. Manufacturer's warranties of the proposed and specified items are: ☒ Same ○ Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item. The undersigned agrees to pay for changes to the building and systems design, including engineering and detailing costs caused by the requested substitution.

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

For Reviewer

☒ Approved for Bidding subject to review and approval of Submittals (and as noted below) ☐ Rejected - Inadequate Information

☐ Not Accepted ☐ Received Too Late

By _____ Date 11/07/19

Remarks

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

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Doreen Klaaskate, Senior Buyer.
E-mail address: dklaaskate@cityoftacoma.org

All e-mails must be received by **Noon on Wednesday, November 6th, 2019.** Where changes in the project documents are required, an addendum will be issued to everyone on the plan holder's list and posted on www.tacomapurchasing.org.

Submitted By Joy Farrell
Signature JOY V Farrell
Company Nu-Ray Metals
Mailing Address 1234 37th St NW
City Auburn State WA Zip 98402
Phone 253-833-7228 Fax 253-833-1279 E-mail joy@nuraymetals.com
☒ Please check if there are attachments

1. We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Page	Line/Paragraph	Specified Item
074113	3/7	2.02	AEP Span, 2" standing seam

2. Proposed Substitution. Nu-Ray Metals NRM-2200
3. Reason for Substitution. Competitive pricing and lead times
4. Attach complete technical data, catalog cuts, drawings, samples, etc. Exact models and description of products shall be noted with any deviation noted.
5. Include complete information on changes to Drawings, and/or Specifications which proposed substitution will require for its proper installation. No changes
6. Does the substitute affect dimensions shown on Drawings? No
6a. If so, how?
7. Describe the effect substitution has on other trades. No effect
8. Describe differences between proposed substitution and specified item. No differences
9. Manufacturer's warranties of the proposed and specified items are: (X) Same ( ) Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item. The undersigned agrees to pay for changes to the building and systems design, including engineering and detailing costs caused by the requested substitution.

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

For Reviewer

☒ Approved for Bidding subject to review and approval of Submittals (and as noted below) ☐ Rejected - Inadequate Information

☐ Not Accepted ☐ Received Too Late

By DBertsch Date 11/08/19

Lawhead Architects PS

Remarks

Product accepted subject to full compliance with contract documents, including revised warranty and finish requirements included in Addendum #2.

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

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Doreen Klaaskate, Senior Buyer.
E-mail address: dklaaskate@cityoftacoma.org

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Submitted By Joy Farrell
Signature Joy Farrell
Company Nu-Ray Metals
Mailing Address 1234 37th St NW
City Auburn State WA Zip 98402
Phone 253-833-7228 Fax 253-833-1279 E-mail joy@nuraymetals.com
☒ Please check if there are attachments

1. We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Page	Line/Paragraph	Specified Item
074619	3/4	2.02	AEP Span Mini-V-Beam

2. Proposed Substitution. Nu-Ray Metals NRM-7000
3. Reason for Substitution. Comparable product, competitive prices and lead times
4. Attach complete technical data, catalog cuts, drawings, samples, etc. Exact models and description of products shall be noted with any deviation noted.
5. Include complete information on changes to Drawings, and/or Specifications which proposed substitution will require for its proper installation. No changes needed
6. Does the substitute affect dimensions shown on Drawings? No
6a. If so, how?
7. Describe the effect substitution has on other trades. No effect
8. Describe differences between proposed substitution and specified item. Appearance is slightly different, performance is equal, aesthetics remain similar
9. Manufacturer's warranties of the proposed and specified items are: ◉ Same ○ Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item. The undersigned agrees to pay for changes to the building and systems design, including engineering and detailing costs caused by the requested substitution.

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

For Reviewer

☒ Approved for Bidding subject to review and approval of Submittals (and as noted below) ☐ Rejected - Inadequate Information

☐ Not Accepted ☐ Received Too Late

By DBertsch Date 11/08/19

Lawhead Architects PS

Remarks

Product accepted subject to full compliance with contract documents, including revised warranty and finish requirements included in Addendum #2.

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
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E-mail address: dklaaskate@cityoftacoma.org

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Submitted By

Signature _____

Company The Bryer Company

Mailing Address 119 Clay St. NW

City Auburn State WA Zip 98001

Phone 253-735-1824 Fax _____ E-mail christinar@thebryercompany.com

[X] Please check if there are attachments

1. We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Page	Line/Paragraph	Specified Item
07 41 13	3	2.01	AEP Span SpanSeam

2. Proposed Substitution. TBC - Superseam

3. Reason for Substitution. Similar Product, Different Manufacturer

4. Attach complete technical data, catalog cuts, drawings, samples, etc. Exact models and description of products shall be noted with any deviation noted.

5. Include complete information on changes to Drawings, and/or Specifications which proposed substitution will require for its proper installation. _____

6. Does the substitute affect dimensions shown on Drawings? No

6a. If so, how? _____

7. Describe the effect substitution has on other trades. None

8. Describe differences between proposed substitution and specified item. Similar Product, Different Manufacturer

9. Manufacturer's warranties of the proposed and specified items are: (X Same (Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item. The undersigned agrees to pay for changes to the building and systems design, including engineering and detailing costs caused by the requested substitution.

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

For Reviewer

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☐ Not Accepted ☐ Received Too Late

By DBertsch Date 11/08/19

Lawhead Architects PS

Remarks

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Submitted By

Signature _____

Company The Bryer Company

Mailing Address 119 Clay St. NW

City Auburn State WA Zip 98001

Phone 253-735-1824 Fax _____ E-mail christinar@thebryercompany.com

[X] Please check if there are attachments

1. We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Page	Line/Paragraph	Specified Item
07 46 19	3	2.02 A	AEP Span Vented Flush Panel

2. Proposed Substitution. TBC - Flush Panel

3. Reason for Substitution. Similar Product, Different Manufacturer

4. Attach complete technical data, catalog cuts, drawings, samples, etc. Exact models and description of products shall be noted with any deviation noted.

5. Include complete information on changes to Drawings, and/or Specifications which proposed substitution will require for its proper installation. _____

6. Does the substitute affect dimensions shown on Drawings? No

6a. If so, how? _____

7. Describe the effect substitution has on other trades. None

8. Describe differences between proposed substitution and specified item. Similar Product, Different Manufacturer

TBC - Flush panel is available with Vent Strips or Pencil Ribs but not both

9. Manufacturer's warranties of the proposed and specified items are: (X) Same ( ) Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item. The undersigned agrees to pay for changes to the building and systems design, including engineering and detailing costs caused by the requested substitution.

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

For Reviewer

☒ Approved for Bidding subject to review and approval of Submittals (and as noted below) ☐ Rejected - Inadequate Information

☐ Not Accepted ☐ Received Too Late

By DBertsch Date 11/08/19

Lawhead Architects PS

Remarks

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SUBSTITUTION REQUEST FORM

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Submitted By

Signature _____

Company The Bryer Company

Mailing Address 119 Clay St. NW

City Auburn State WA Zip 98001

Phone 253-735-1824 Fax _____ E-mail christinar@thebryercompany.com

☒ Please check if there are attachments

1. We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Page	Line/Paragraph	Specified Item
07 46 19	3	2.02 A	AEP Span Mini V-Beam

2. Proposed Substitution. TBC - V Rib 34

3. Reason for Substitution. Similar Product, Different Manufacturer

4. Attach complete technical data, catalog cuts, drawings, samples, etc. Exact models and description of products shall be noted with any deviation noted.

5. Include complete information on changes to Drawings, and/or Specifications which proposed substitution will require for its proper installation. _____

6. Does the substitute affect dimensions shown on Drawings? No

6a. If so, how? _____

7. Describe the effect substitution has on other trades. None

8. Describe differences between proposed substitution and specified item. Similar Product, Different Manufacturer

9. Manufacturer's warranties of the proposed and specified items are: (X) Same ( ) Different (explain on attachment)

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SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

For Reviewer

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☐ Not Accepted ☐ Received Too Late

By DBertsch Date 11/08/19

Lawhead Architects PS

Remarks

Product accepted subject to full compliance with contract documents, including revised warranty and finish requirements included in Addendum #2.

STRUCTURAL

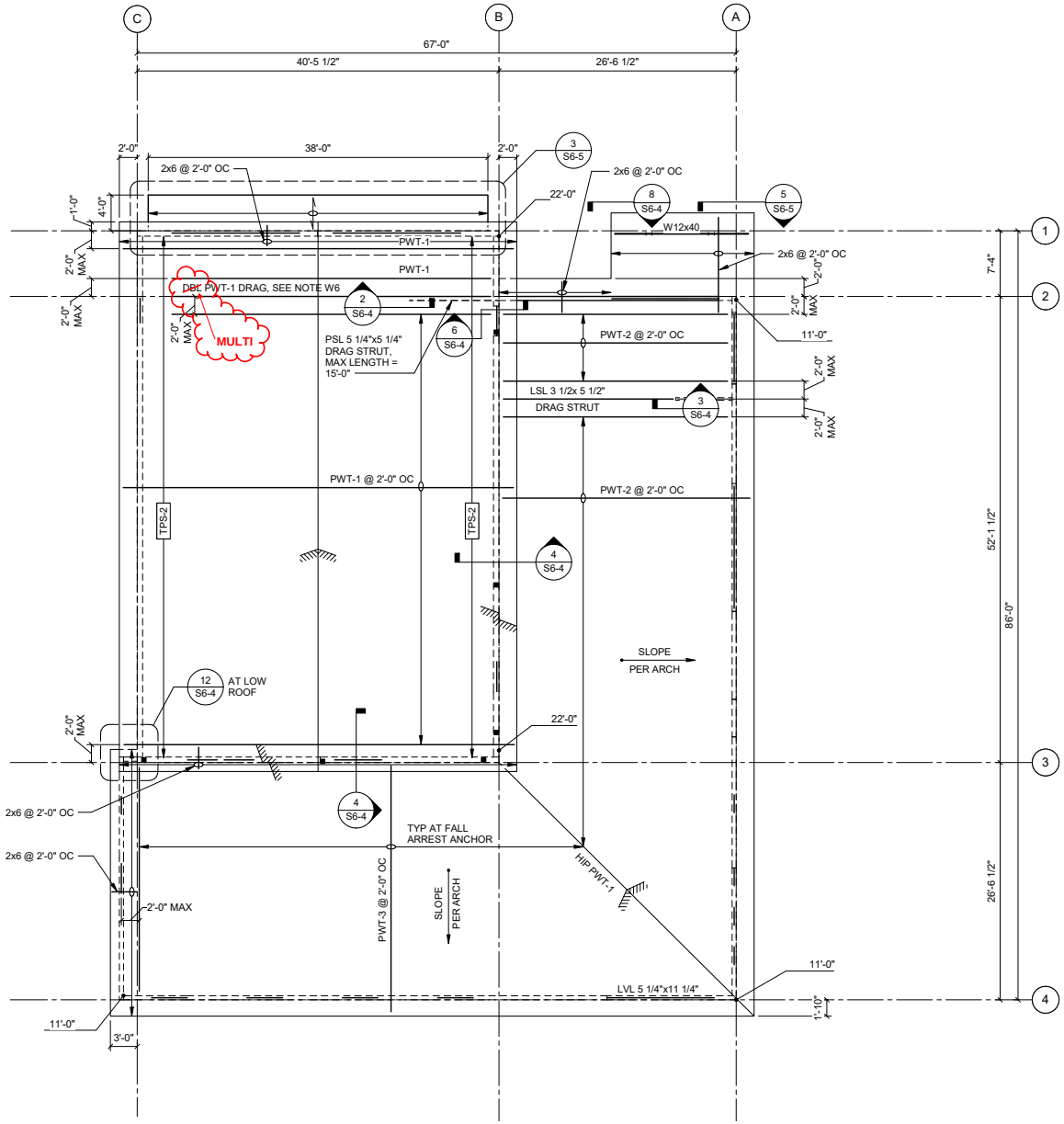
DRAWINGS:

SHEET S2-2 ROOF PLAN
REVISE: Notes as shown on Addendum drawings SSK-01 and SSK-06

SHEET S6-1 TYPICAL WOOD DETAILS
ADD: Detail 11 for Typical Interior Non-bearing Acoustical Wall Top Plate Anchorage as shown on Addendum drawing SSK-05.
REVISE: Detail 10 as shown on Addendum drawing SSK-02

SHEET S6-2 TYPICAL WOOD DETAILS
REVISE: Detail 1 as shown on Addendum drawing SSK-03

SHEET S6-4 WOOD DETAILS
REVISE: Detail 2 as shown on Addendum drawing SSK-04.
REVISE: Detail 4 as shown on Addendum drawing SSK-07.



GENERAL PLAN NOTES:

G1. REFERENCE DRAWINGS:
S0-X - STRUCTURAL NOTES, SPECIAL INSPECTION SCHEDULE, SYMBOLS AND ABBREVIATIONS
S4-X - CONCRETE DETAILS
S6-X - WOOD DETAILS

G2. ONLY STRUCTURAL WALLS ARE INDICATED. ARCHITECTURAL DRAWINGS HAVE BEEN SHOWN SCREENED BACK FOR REFERENCE AND TO SHOW NON-STRUCTURAL WALL LOCATIONS.

G3. DIMENSIONS SHOWN TO WALLS ARE TO FACE OF CONCRETE OR FACE OF WOOD STUDS. DIMENSIONS SHOWN TO BEAMS ARE TO CENTERLINE, UNO.

WOOD FRAMING PLAN NOTES:

W1. ROOF SHEATHING SHALL BE PER 11/S6-3.

W2. TPS-2 INDICATES TOP PLATE SPLICE PER 5/S6-1. PROVIDE TPS-1, UNO.

W3. SEE 1/S6-2 FOR PREMANUFACTERED WOOD TRUSS LOADING INFORMATION.

W4. TYPICAL HEADERS:
SPAN ≤ 4'-0" = 1.3E LSL 3 1/2"x7 1/4"
SPAN ≤ 8'-0" = 2.0E LVL 5 1/4"x11 1/4"
SPAN ≤ 15'-0" = PSL 7"x11 7/8"

W5. ■ INDICATES FALL ARREST ANCHOR. SEE ARCH FOR LOCATION. SEE 7/S6-4 FOR ADDED STUDS AND SUPPORT BRACKET.

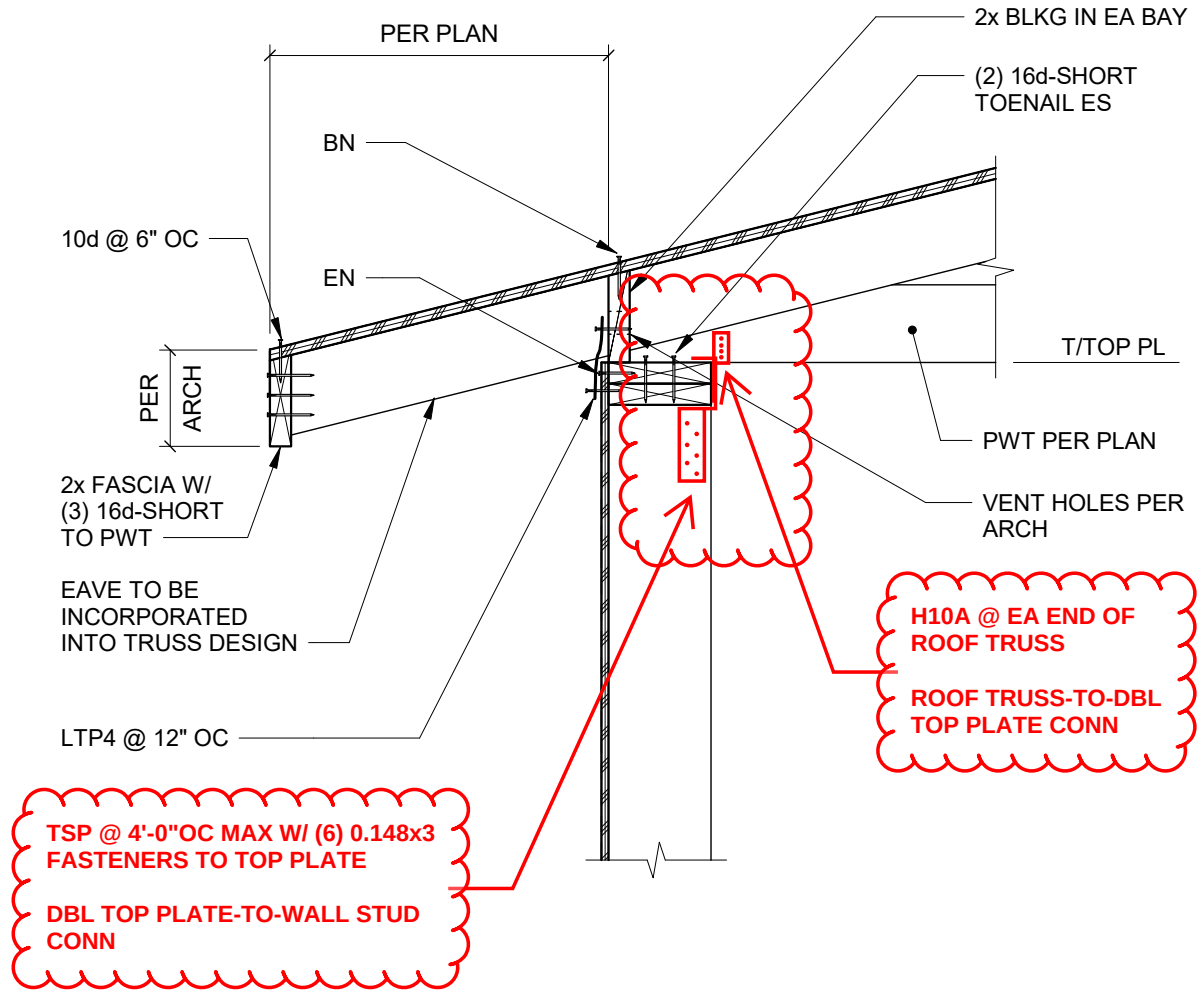
W6. PROVIDE EDGE NAILING AT EACH TRUSS FOR DBL PWT-1 DRAG

MULTI

kpff
1601 Fifth Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
kpff.com

Tacoma FS #5 Addendum #2

PROJECT NO.	190015
DATE	10/26/19
BY	JDA
REFERENCE SHEET	S2-2
SKETCH NO.	SSK-01



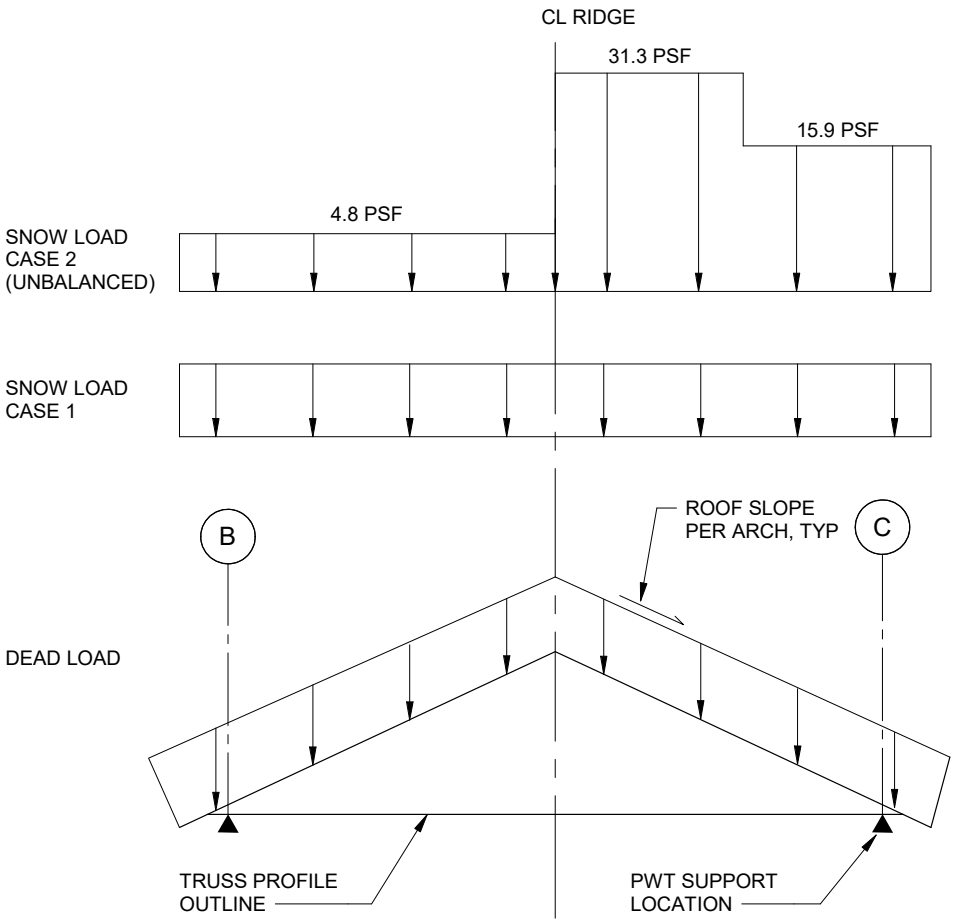
10 SECTION AT EAVE

NO SCALE

kpff
1601 Fifth Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
kpff.com

Tacoma FS #5 Addendum #2

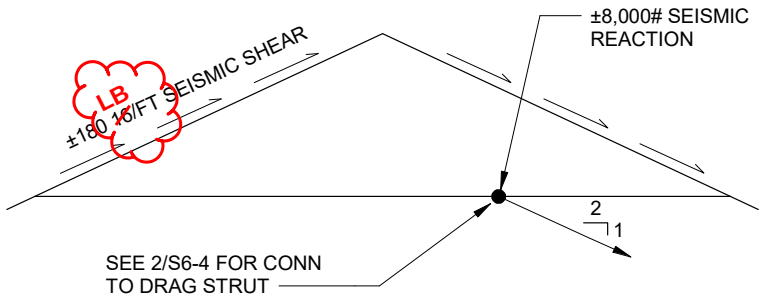
PROJECT NO.	190015
DATE	10/26/19
BY	JDA
REFERENCE SHEET	S6-1
SKETCH NO.	SSK-02



PWT-1

SEE PWT-1 FOR TYPICAL LOADING

NOTES:
1. DESIGN INTENT FOR THIS DRAG ROOF TRUSS MEMBER IS FOR IT TO BE MULTI-PLY BASED ON THE TRUSS MFR'S DESIGN, GIVEN THE LOADS BELOW.



DBL PWT-1 DRAG

MULTI

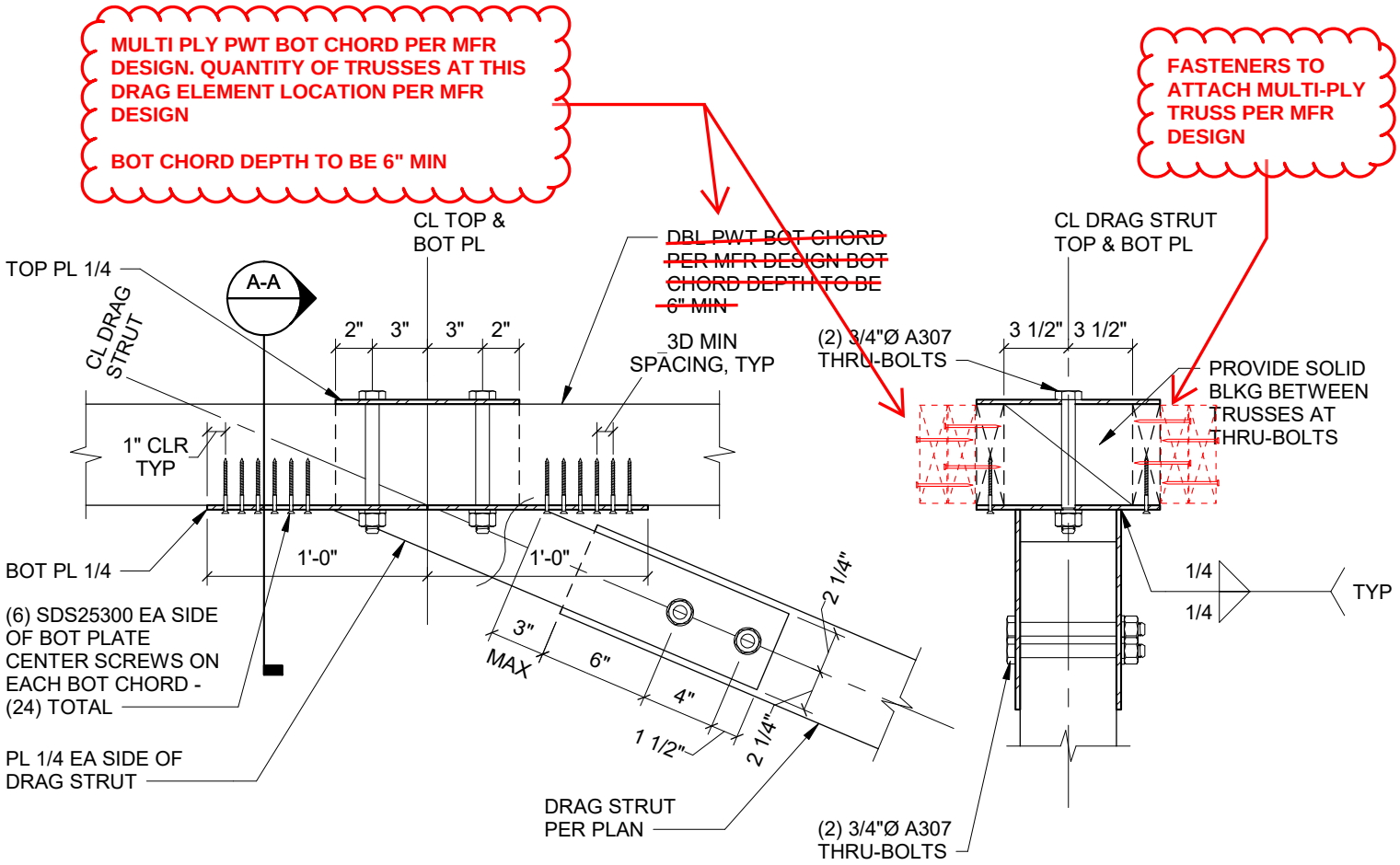
1 PWT LOADING DIAGRAMS

NO SCALE

kpff
1601 Fifth Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
kpff.com

Tacoma FS #5 Addendum #2

PROJECT NO.	190015
DATE	10/26/19
BY	JDA
REFERENCE SHEET	S6-2
SKETCH NO.	SSK-03



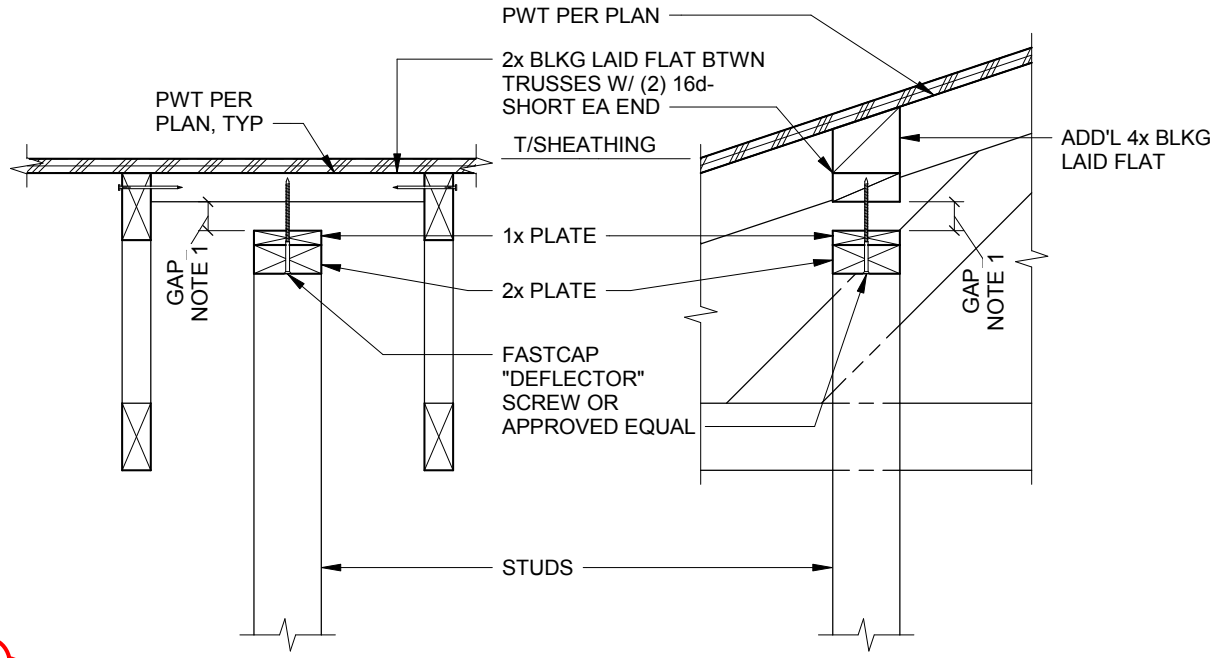
SECTION A-A

2 DRAG STRUT TO PWT CONN

1 1/2" = 1'-0"

kpff
1601 Fifth Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
kpff.com

Tacoma FS #5 Addendum #2	PROJECT NO. 190015	REFERENCE SHEET S6-4
	DATE 10/26/19	SKETCH NO. SSK-04
	BY JDA	



NEW DETAIL

PARALLEL TO JOISTS PERPENDICULAR TO JOISTS

NOTES:
1. PROVIDE 1-1/2" GAP AT LOW BAY AREA (SOUTH OF GRID B). PROVIDE 2" GAP AT HIGH BAY (NORTH OF GRID B).
2. DO NOT INSTALL NON-BEARING PARTITIONS UNTIL DEAD LOAD IS IN PLACE. AT ROOF CONSTRUCTION AND WHERE A DEFLECTION SPACE HAS BEEN PROVIDED FOR THIS REQUIREMENT MAY BE WAIVED.
3. DO NOT CONNECT CEILING GYP BOARD TO FRAMING WITHIN 24" OF NON-STRUCTURAL PARTITION WALL. OPTION FOR CONTRACTOR TO USE FASTCAP "F-CORNER" TO SUPPORT CEILING SHEATHING.

11

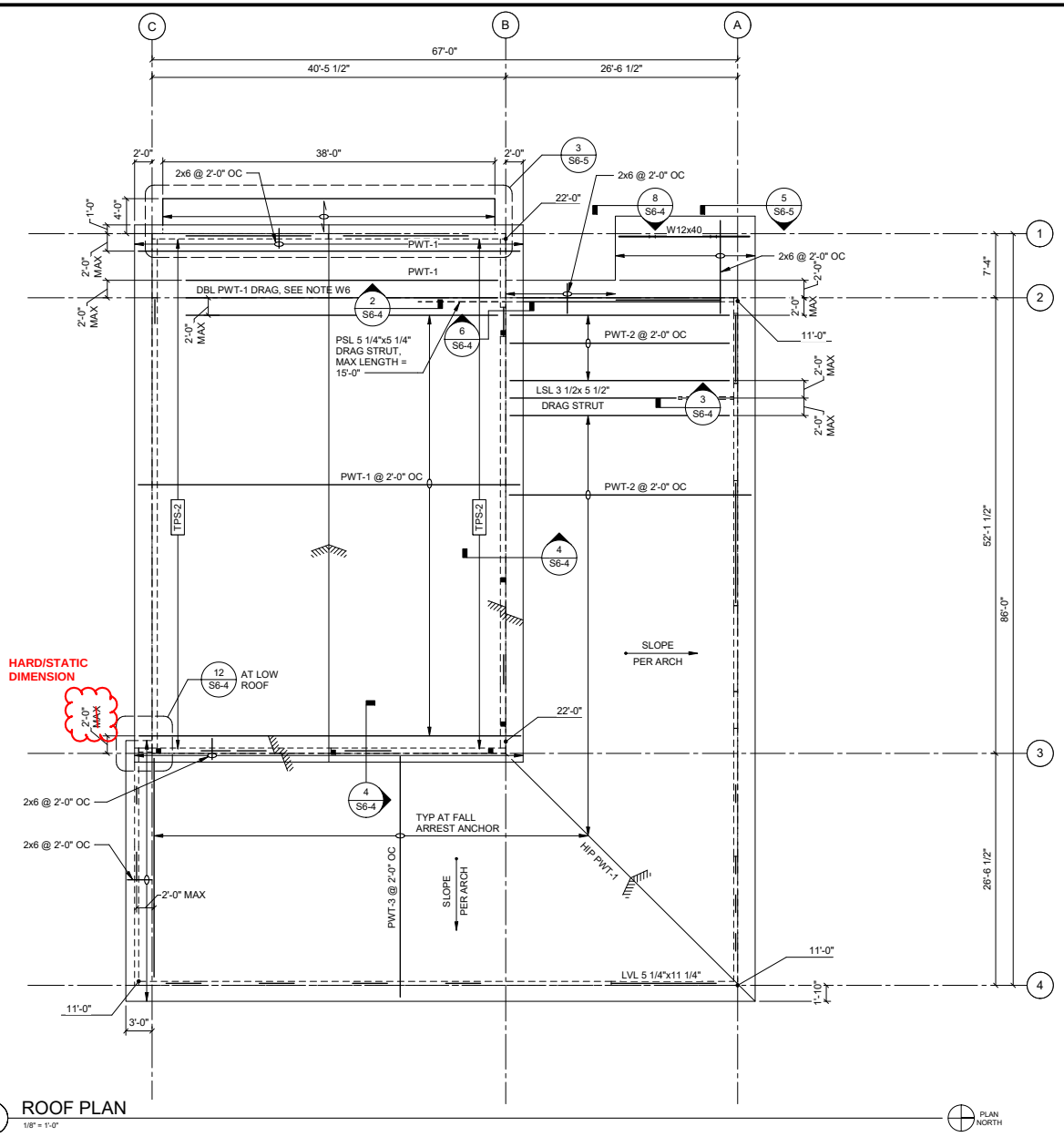
TYP INTERIOR NON-BEARING ACOUSTICAL WALL TOP PLATE ANCHORAGE

NO SCALE

kpff
1601 Fifth Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
kpff.com

TACOMA FS #5 ADDENDUM #2

PROJECT NO.	1900015
DATE	11/06/19
BY	JDA
REFERENCE SHEET	S6-1
SKETCH NO.	SSK-05



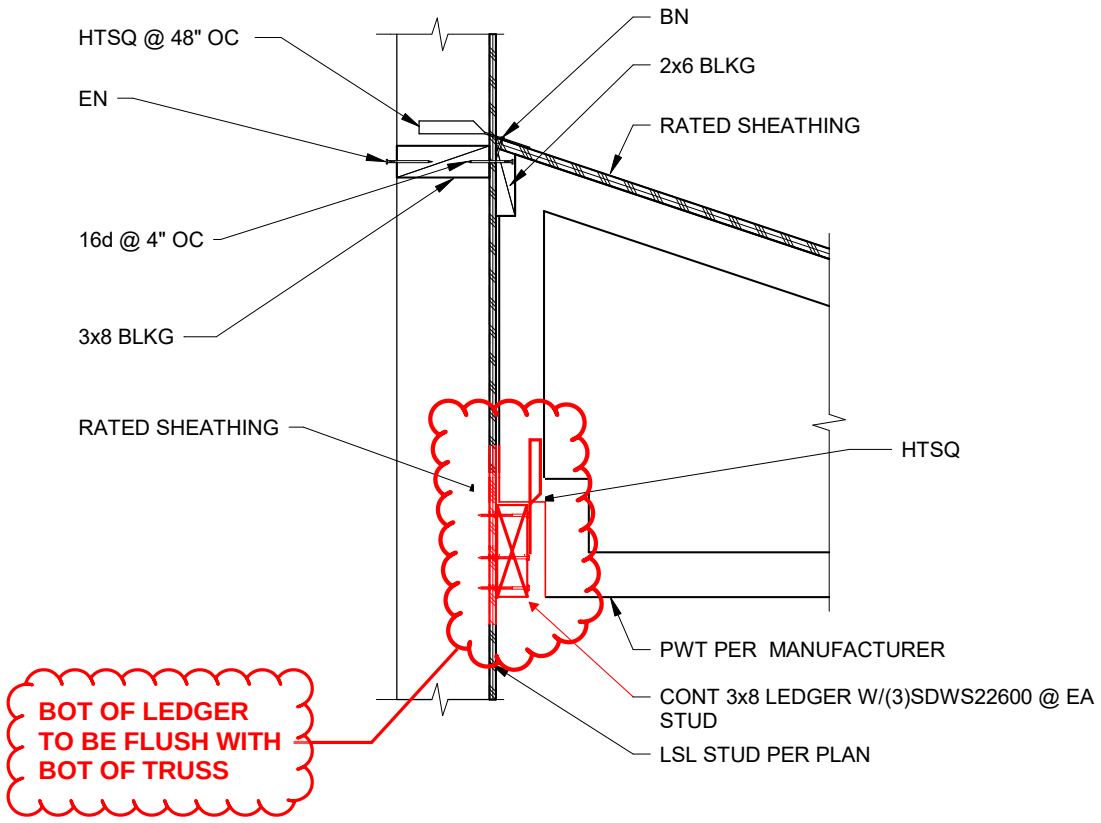
1 ROOF PLAN
1/8" = 1'-0"

PLAN NORTH

kpff
1601 Fifth Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
kpff.com

TACOMA FS #5 ADDENDUM #2

PROJECT NO.	1900015
DATE	11/06/19
BY	JDA
REFERENCE SHEET	S2-2
SKETCH NO.	SSK-06



4 PWT STUD CONNECTION

NO SCALE

kpff
1601 Fifth Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
kpff.com

TACOMA FS #5 ADDENDUM #2	PROJECT NO. 1900015	REFERENCE SHEET S6-4
	DATE 11/06/19	SKETCH NO. SSK-07
	BY JDA	

MECHANICAL

DRAWINGS:

SHEET M2-1 FOUNDATION PLAN

REVISE: Plumbing system to locate RPBA in the Apparatus Bay as shown on Addendum drawing MSK-01.

SHEET M3-1 PLUMBING PLAN

REVISE: Plumbing system to locate RPBA in the Apparatus Bay as shown on Addendum drawing MSK-02.

SHEET M3-2 PLUMBING DETAILS

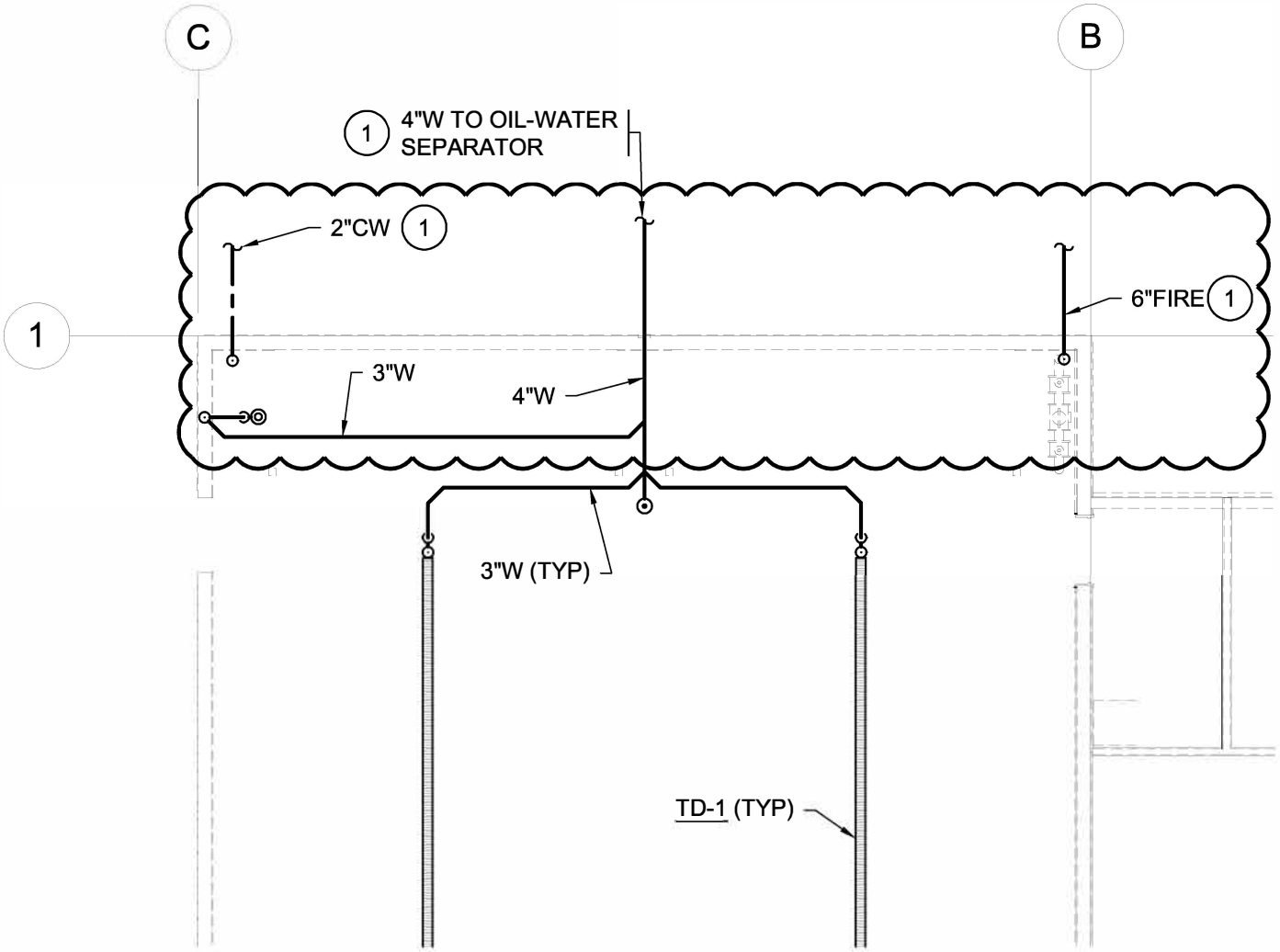
REVISE: Detail 2 to remove RPBA from the Water Header Detail as shown on Addendum drawing MSK-03.

ADD: Detail 7 for Vertical RPBA revision as shown on Addendum drawing MSK-04.

SHEET M4-1 HVAC PLAN

ADD: CO2 sensor in Dining Room 105, on wall adjacent to thermostat.

REVISE: HVAC system in the Apparatus Bay to reflect Nederman Magna Track Green vehicle exhaust system as shown on Addendum drawing MSK-05.



1 FOUNDATION PLAN

1/8" = 1'-0"

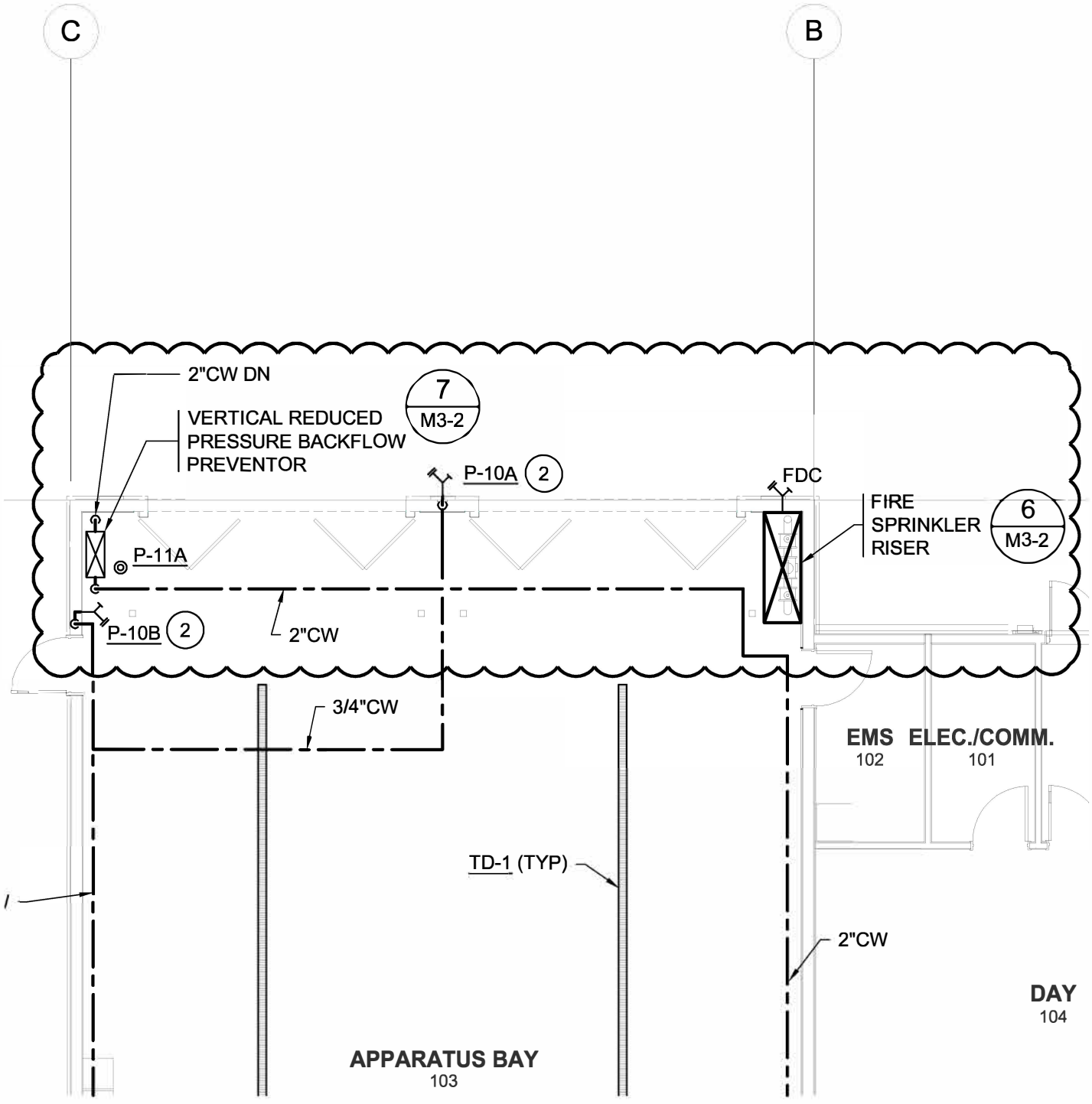
N

HULTZ BHU engineers inc
1111 Fawcett Ave Suite 100 Tacoma, WA 98402
Phone: (253) 383-3257 Fax: (253) 383-3283
general@hultzbhu.com Job Number: 19-010

Sheet Contents: MSK-01

Project Title: CITY OF TACOMA FIRE STATION #5 ADDENDUM NO. 2

Project No.	19-010
Sheet	M2-1
Scale	1/8"=1'-0"
Date	10-31-2019



1 PLUMBING PLAN

1/8" = 1'-0"

N

HULTZ BHU
engineers inc
1111 Fawcett Ave Suite 100 Tacoma, WA 98402
Phone: (253) 383-3257 Fax: (253) 383-3283
general@hultzbhu.com Job Number: 19-010

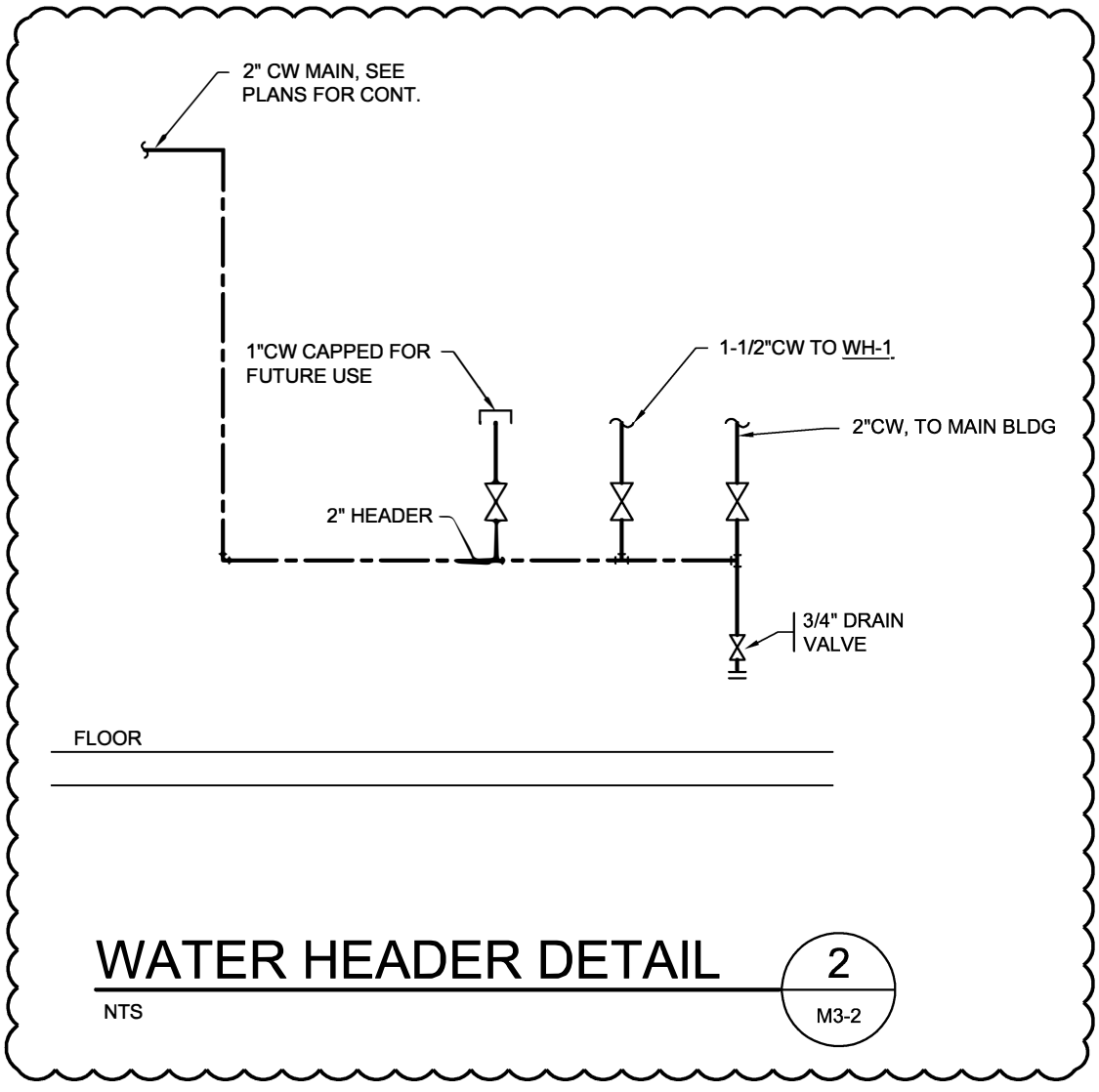
Sheet Contents

MSK-02

Project Title

CITY OF TACOMA
FIRE STATION #5
ADDENDUM NO. 2

Project No.	19-010
Sheet	M3-1
Scale	1/8"=1'-0"
Date	10-31-2019



WATER HEADER DETAIL

2
M3-2

NTS

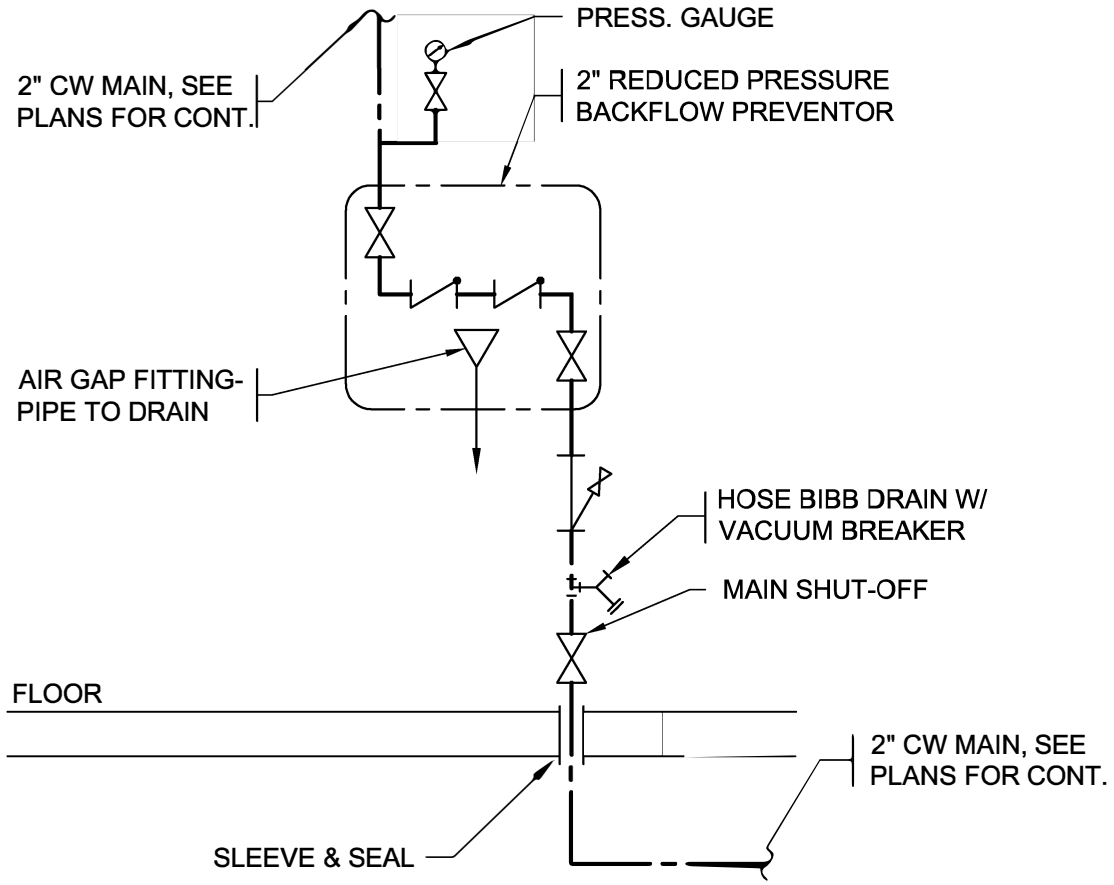
HULTZ BHU
engineers inc

1111 Fawcett Ave Suite 100 Tacoma, WA 98402
Phone: (253) 383-3257 Fax: (253) 383-3283
general@hultzbhu.com Job Number: 19-010

Sheet Contents: MSK-03

Project Title: CITY OF TACOMA
FIRE STATION #5
ADDENDUM NO. 2

Project No.	19-010
Sheet	M3-2
Scale	NTS
Date	10-31-2019



VERTICAL RPBA DETAIL

7

M3-2

NTS

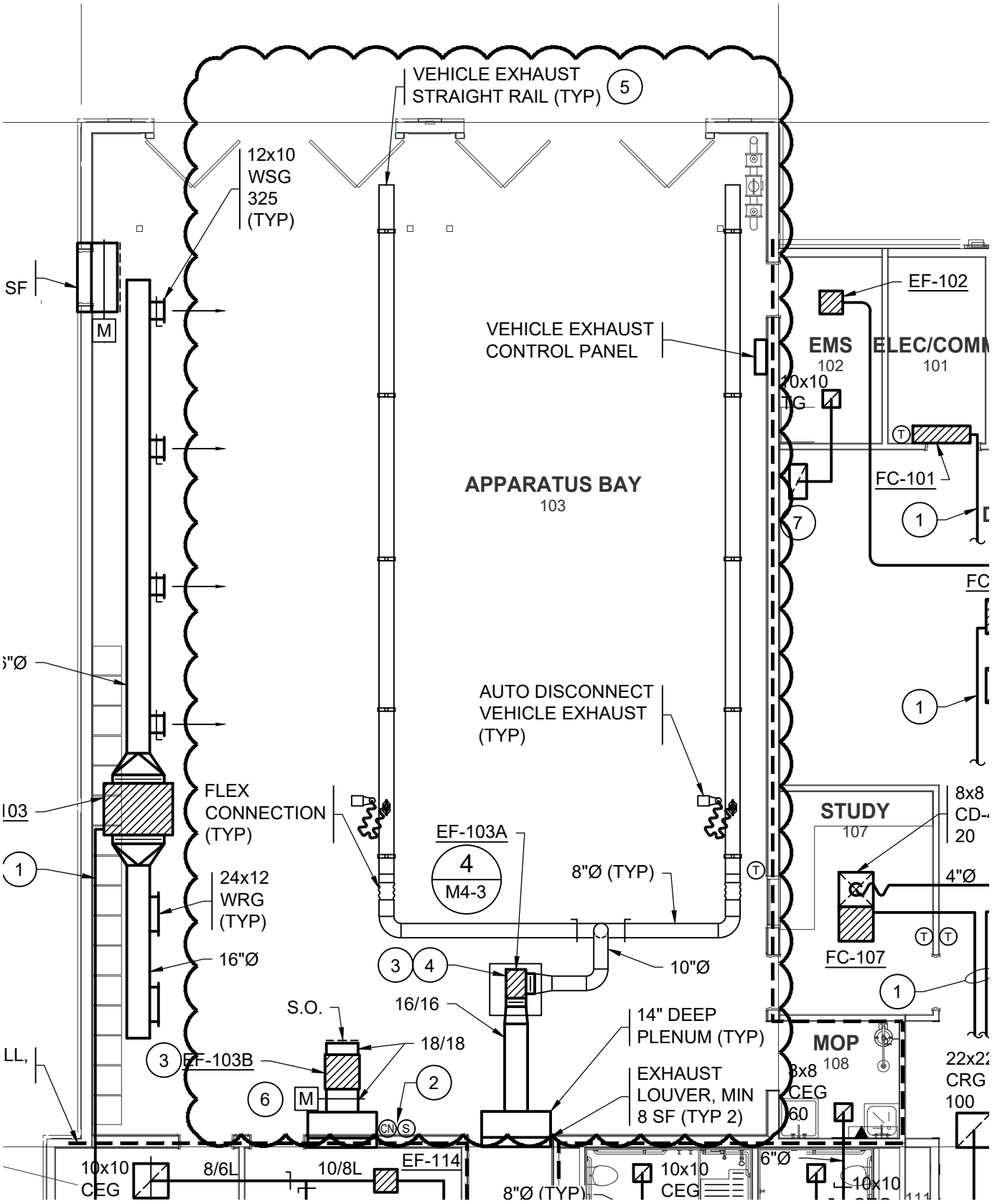
HULTZ BHU engineers inc

1111 Fawcett Ave Suite 100 Tacoma, WA 98402
Phone: (253) 383-3257 Fax: (253) 383-3283
general@hultzbhu.com Job Number: 19-010

Sheet Contents: MSK-04

Project Title: CITY OF TACOMA
FIRE STATION #5
ADDENDUM NO. 2

Project No.	19-010
Sheet	M3-2
Scale	NTS
Date	10-31-2019



HULTZ BHU
engineers inc

1111 Fawcett Ave Suite 100 Tacoma, WA 98402
Phone: (253) 383-3257 Fax: (253) 383-3283
general@hultzbhu.com Job Number: 19-010

Sheet Contents

MSK-05

Project Title

CITY OF TACOMA
FIRE STATION #5
ADDENDUM NO. 2

Project No.	19-010
Sheet	M4-1
Scale	NTS
Date	11-5-2019

ELECTRICAL

DRAWINGS:

SHEET E1.1 ELECTRICAL SITE PLAN

REVISE: Electrical Site Plan and Electrical Sheet Notes to add conduits for communications as shown on Addendum drawing ESK-03.

SHEET E5.1 ELECTRICAL DETAILS

REVISE: Oneline Distribution Diagram to add Energy Meter as shown on Addendum drawing ESK-01.

SHEET E7.1 ELECTRICAL SCHEDULES

REVISE: Panel B schedule note regarding Energy Meter as shown on Addendum drawing ESK-02.

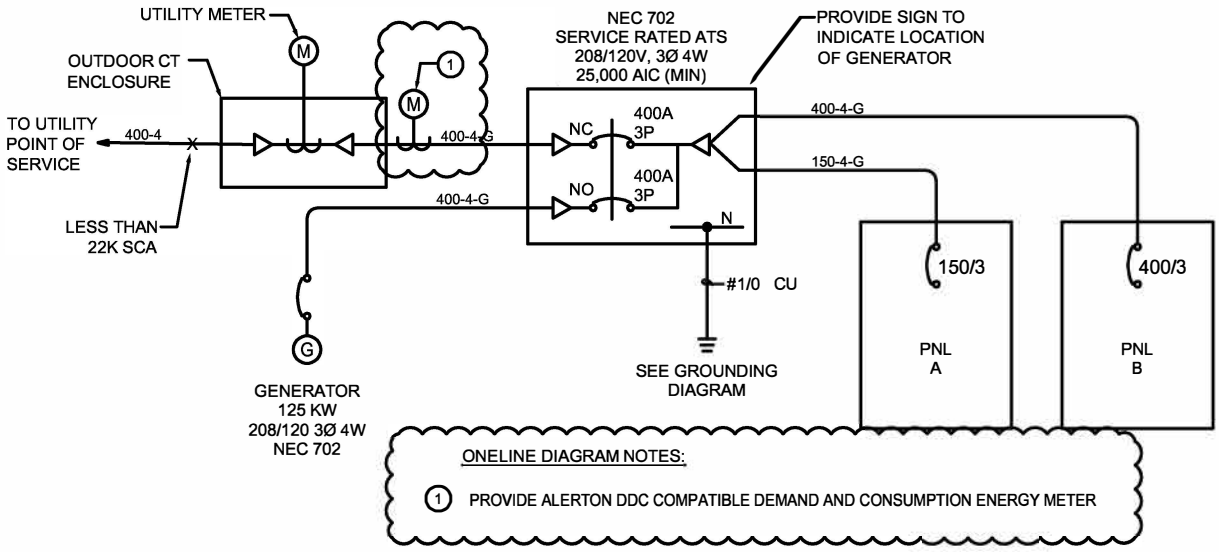
SUBSTITUTION REQUEST APPROVALS:

The following products are approved for bidding subject to review and approval of Submittals and provided the Manufacturer meets all the requirements of the originally specified product. It shall be the initiator's responsibility to ensure that the proposed substitution is equal in every respect to the originally specified product, including but not limited to finish, size, weight, clearances, durability, maintenance, ease of operation, performance criteria, etc.

SECTION 26 50 00 LIGHTING: Additional manufacturers per the attached substitution requests submitted from the following companies.

- Lighting Group LLC
- Sea-Tac Lighting and Controls LLC

*Note: P2 luminaire substitution was rejected



1 ONELINE DISTRIBUTION DIAGRAM

SCALE: NTS

HULTZ BHU engineers inc

1111 Fawcett Ave Suite 100 Tacoma, WA 98402
Phone: (253) 383-3257 Fax: (253) 383-3283
general@hultzbhu.com Job Number: 19-010

Sheet Contents

ESK-01

Project Title

CITY OF TACOMA
FIRE STATION #5
ADDENDUM NO. 2

Project No.	19-010
Sheet	E5.1
Scale	NTS
Date	10-31-2019

Panel 'B'

120/208V, 3 Ph., 4 W.; 400A Bus with 400A Main Circuit Breaker Surface Mounted Panelboard

Ckt. No.	Description / Location	Load (VA)	Type	C.B. A/Pole	Note	Ph.	Note	C.B. A/Pole	Load (VA)	Type	Description / Location	Ckt. No.
1	HEAT PUMP, HP-1	4,130	C	70/3	1	A	1	100/3	8,544	G	WASHER EXTRACTOR, WE-1	2
3	-	4,130	C	-	1	B	1	-	8,544	G	-	4
5	-	4,130	C	-	1	C	1	-	8,544	G	-	6
7	FAN COIL, FC-120,121,122	150	C	15/2		A		15/2	624	C	DOAS-1	8
9	-	150	C	-		B		-	624	C	-	10
11	EXHAUST FAN, EF-109	528	M	20/1		C		60/3	5,006	WH	WATER HEATER, WH-1	12
13	EXHAUST FAN, EF-8; EF-114	1,056	M	20/1		A		-	5,006	WH	-	14
15	EXHAUST FAN, EF-103B	1,920	M	25/1		B		-	5,006	WH	-	16
17	FAN COIL, FC-104A, 104B, 107	121	C	15/2		C		20/2	1,476	G	GATE POWER	18
19	-	121	C	-		A		-	1,476	G	-	20
21	FAN COIL, FC-103	187	C	15/2		B		20/3	420	G	FOUR FOLD DOOR POWER	22
23	-	187	C	-		C		-	420	G	-	24
25	FAN COIL, FC-117,119,BC-1	150	C	15/2		A		-	420	G	-	26
27	-	150	C	-		B		20/3	420	G	FOUR FOLD DOOR POWER	28
29	CIRC PUMP, CP-1	250	M	20/1		C		-	420	G	-	30
31	EF-103A	2,100	M	35/3		A		-	420	G	-	32
33	-	2,100	M	-		B		20/3	1,667	H	DUCT HEATER, DH-1	34
35	-	2,100	M	-		C		-	1,667	H	-	36
37	CORD REEL	180	R	20/1		A		-	1,667	H	-	38
39	CORD REEL	180	R	20/1		B		20/1	180	R	LEVEL 1 EV CHARGER	40
41	FAN COIL FC-100, 101	150	C	15/2		C					RESERVED FOR FUTURE LEVEL 2	42
43	-	150	C	-		A		20/1	180	R	LEVEL 1 EV CHARGER	44
45	EF-102	500	M	20/1		B					RESERVED FOR FUTURE LEVEL 2	46
47	ENERGY MANAGEMENT METER			30/3	1	C		40/2	3,600	C	LEVEL 2 EV CHARGER	48
49	-			-	1	A		-	3,600	C	-	50
51	-			-	1	B		40/2	3,600	C	LEVEL 2 EV CHARGER	52
53	SPACE					C		-	3,600	C	-	54

Total Connected Load:	Ph. A	29,973 VA	250 Amps	Panel Connected Load:	91.9 KVA 255.4 Amps
Total Connected Load:	Ph. B	29,777 VA	248 Amps	Sub-Fed Connected Load:	0.0 KVA 0.0 Amps
Total Connected Load:	Ph. C	32,199 VA	268 Amps	**Total Demand Load:**	100.9 **KVA** 280.3 **Amps**

Notes:
1. PROVIDE ALERTON DDC COMPATIBLE DEMAND AND CONSUMPTION ENERGY SUBMETER
2.
3.
4.

Accessories:

Load Type	Load Description	Connected Loads	Subfed Loads (S)	Total Loads	Demand Factor	Demand Load
G	General (Non-Continuous)	31.10	0.00	31.10	100%	31.10 (KVA Typical)
L	Lighting	0.00	0.00	0.00	125%	0.00
R	Receptacles - to 10 KVA	0.72	0.00	0.72	100%	0.72
	over 10 KVA		0.00	0.00	50%	0.00
K	Kitchen	0.00	0.00	0.00	100%	0.00
H	Heating	5.00	0.00	5.00	100%	5.00
M	Motors	4.25	0.00	4.25	100%	4.25
LM	Largest Motor	6.30	0.00	6.30	125%	7.88
WH	Water Heater	15.02	0.00	15.02	100%	15.02
C	Continuous General Load	29.55	0.00	29.55	125%	36.94
					Total:	100.91 **KVA**

HULTZ BHU engineers inc
1111 Fawcett Ave Suite 100 Tacoma, WA 98402
Phone: (253) 383-3257 Fax: (253) 383-3283
general@hultzbhu.com Job Number: 19-010

Sheet Contents: ESK-02

Project Title: CITY OF TACOMA FIRE STATION #5 ADDENDUM NO. 2

Project No. 19-010
Sheet E7.1
Scale NTS
Date 10-31-2019

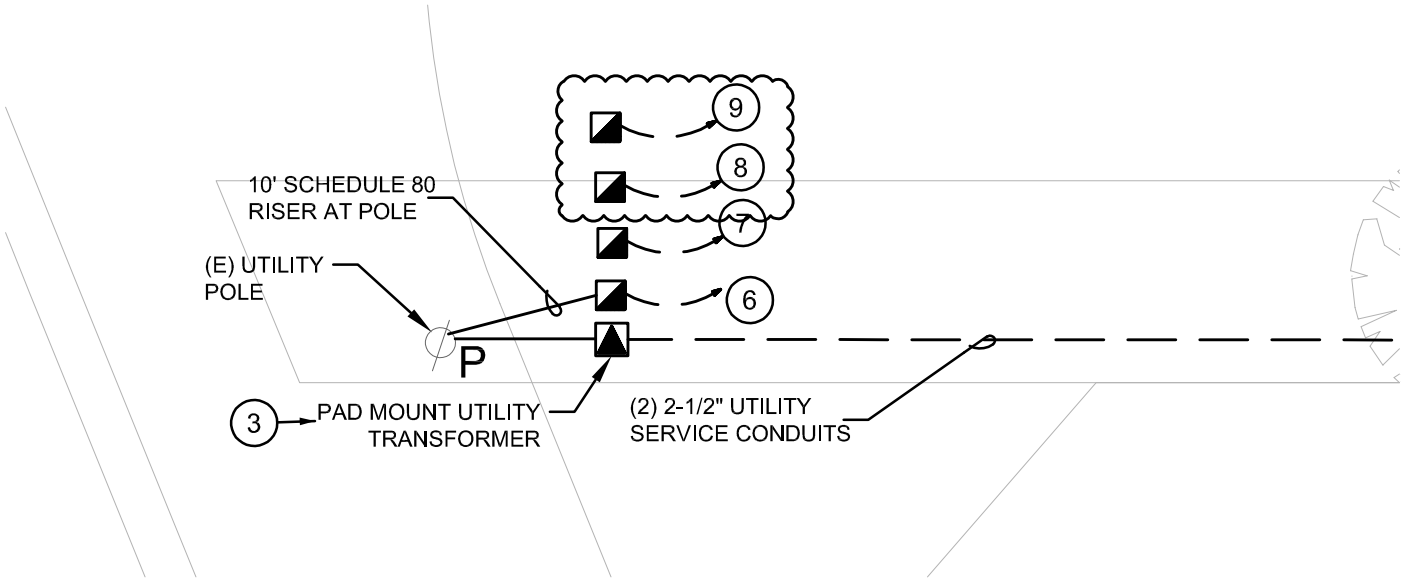
ELECTRICAL SHEET NOTES:

6. PROVIDE (1) 2" SCH 40 PVC CONDUIT WITH PULL STRING FROM CLICK VAULT TO TELEPHONE BACKBOARD IN COMM ROOM 101. COORDINATE VAULT LOCATION WITH PROVIDER.

7. PROVIDE (1) 4" SCH 40 PVC CONDUIT WITH PULL STRING FROM COMCAST VAULT TO TELEPHONE BACKBOARD IN COMM ROOM 101. COORDINATE VAULT LOCATION WITH PROVIDER.

8. PROVIDE (1) 2" SCH 40 PVC CONDUIT WITH PULL STRING FROM CENTURYLINK VAULT TO TELEPHONE BACKBOARD IN COMM ROOM 101. COORDINATE VAULT LOCATION WITH PROVIDER.

9. PROVIDE (1) 2-1/2" SCH 40 PVC CONDUIT WITH PULL STRING FROM HANDHOLE TO TELEPHONE BACKBOARD IN COMM ROOM 101 FOR FIRE DEPARTMENT FIBER. COORDINATE HANDHOLE LOCATION WITH CITY OF TACOMA.



1 ELECTRICAL SITE PLAN

1"=20'

N

HULTZ BHU engineers inc

1111 Fawcett Ave Suite 100 Tacoma, WA 98402
Phone: (253) 383-3257 Fax: (253) 383-3283
general@hultzbhu.com Job Number: 19-010

Sheet Contents: ESK-03

Project Title: CITY OF TACOMA FIRE STATION #5 ADDENDUM NO.2

Project No.	19-010
Sheet	E1.1
Scale	NTS
Date	11-07-2019

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

Prospective bidders may request substitutions in writing on this form. Substitutions shall be submitted on this form via e-mail to:

Doreen Klaaskate, Senior Buyer.
E-mail address: dklaaskate@cityoftacoma.org

All e-mails must be received by **Noon on Wednesday, November 6th, 2019. W**here changes in the project documents are required, an addendum will be issued to everyone on the plan holder's list and posted on www.tacomapurchasing.org.

Submitted By

Signature Chris Hamaker

Company **Lighting Group LLC**

Mailing Address **5700 6th Ave S**

City **Seattle** State **WA** Zip **98108**

Phone **206-298-9000** Fax _____ E-mail **chamaker@lightinggroup.com**

☐ Please check if there are attachments

1. We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Page	Line/Paragraph	Specified Item
265000	All	All	Lighting

2. Proposed Substitution. **Attached**

3. Reason for Substitution. **Proposed is equal or better than the specified product.**

4. Attach complete technical data, catalog cuts, drawings, samples, etc. Exact models and description of products shall be noted with any deviation noted.

5. Include complete information on changes to Drawings, and/or Specifications which proposed substitution will require for its proper installation.

6. Does the substitute affect dimensions shown on Drawings? **No**

6a. If so, how?

7. Describe the effect substitution has on other trades. **There are no effect on other trades.**

8. Describe differences between proposed substitution and specified item. **Proposed is equal or better than specified product.**

9. Manufacturer's warranties of the proposed and specified items are: ✗ Same ○ Different explain or attachment

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item. The undersigned agrees to pay for changes to the building and systems design, including engineering and detailing costs caused by the requested substitution.

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

For Reviewer

☒ Approved for Bidding subject to review and approval of Submittals (and as noted below) ☐ Rejected - Inadequate Information

☐ Not Accepted ☐ Received Too Late

By Eric Roberts - Hultz|BHU Date 11/08/2019

Remarks

P2 luminaire is rejected. P2 luminaire to remain Insight Lighting's Adobe series as specified on luminaire schedule

Transmittal

The Lighting Group LLC
5700 6th Ave South, Ste 215
Seattle WA 98108
Phone: (206) 298-9000
From: Chris Hamaker

Project **Tacoma Fire Department - Fire Station # 5 Phase**
Quote# LGNW19-70895
Location Tacoma Wa
To Lawhead Architects
12342 Northup Way
Bellevue WA 98005
Contact: Frank Lawhead

ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

- ☐ Drawings
- ☐ Prints
- ☐ Plans
- ☐ Specifications
- ☐ Information
- ☒ Submittals
- Other:

THESE ARE TRANSMITTED FOR:

- ☒ Prior Approval
- ☐ Approval
- ☐ Approval as Submitted
- ☐ Approval as Noted
- ☐ Resubmittal for Approval
- ☐ Corrections
- ☐ Your Use
- ☐ Review and Comment
- ☐ Record
- Bids due on:
- Other:

Qty	Type	MFG	Part
0			*** LIGHTING ***
2	A1	Lithonia Lighting	RSX2 LED P4 40K R3 MVOLT SPA SPD20KV NLTAIR2 PIRHN
2	A1	Lithonia Lighting **Item Note:** GFCI RECP BY OTHERS	SSS 25 4C DM19AS DDBXD
8	L1	Lithonia Lighting	SPANL 2X2 3300LM 80CRI 35K 3DCB MIN10 ZT MVOLT WH
4	L2	Lithonia Lighting	EPANL 2X2 3400LM 80CRI 35K MIN10 ZT MVOLT
11	L3	Lithonia Lighting	SPANL 1X4 4000LM 80CRI 35K 3DCB MIN10 ZT MVOLT WH
4	L4	Luminaire LED **Item Note:** PHILIPS HEAD SCREWS	VPF44-25W-4000K-DIM-UNV-WHT-WET
12	P1	Lithonia Lighting	IBL 12L ND MVOLT LP840 LCOZU DWH IBAC120 M20
1	P2	Lumenwerx	CAVCPDI-CO-RLO-LED-80CRI-500/500-35-5FT-UNV-D1-1-53WAC36-AL
14	R1	Pathway Lighting	4VLFL2X-1100-4K-120/277-DA / 4VLED-SCLPF
2	R2	Pathway Lighting	4VLFL2X-2000-4K-120/277-DA / 4VLEDWL2-SCLPF
24	R3	Lithonia Lighting JUNO	JSF 7IN 10LM 40K 90CRI MVOLT ZT WH
3	S1	Lithonia Lighting	TFX1 LED 40K MVOLT THK DDBXD
1	UC1	Airey-Thompson	13L-H-40K-12-2-0
4	UC4	Airey-Thompson	13L-H-40K-48-2-0
2	W1	Lithonia Lighting	FMVCSLS 36IN MVOLT 30K 90CRI XX
4	W2	Lithonia Lighting	WSQ LED P2 SR3 MVOLT DDBXD

Transmittal

The Lighting Group LLC
5700 6th Ave South, Ste 215
Seattle WA 98108
Phone: (206) 298-9000
From: Chris Hamaker

Qty	Type	MFG	Part
6	W3	Winona Lighting	WSL 4FT 500ADJH2 WL WWD 750LMF 80CRI 40K ZT
6	X1	Isolite	ELT-EM-G-XX-XX-SC
7	X2	Isolite	BUG-6-WH

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

Prospective bidders may request substitutions in writing on this form. Substitutions shall be submitted on this form via e-mail to:

Doreen Klaaskate, Senior Buyer.
E-mail address: dklaaskate@cityoftacoma.org

All e-mails must be received by **Noon on Wednesday, November 6th, 2019.** Where changes in the project documents are required, an addendum will be issued to everyone on the plan holder's list and posted on www.tacomapurchasing.org.

Submitted By

Signature: Denzel Jones

Company: Seatac Lighting and Controls

Mailing Address: 15455 53rd Avenue S

City: Tukwila State: WA Zip: 98188

Phone: 206-575-6865 Fax: E-mail: djones@seataclighting.com

[X] Please check if there are attachments

1. We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Page	Line/Paragraph	Specified Item
26000	All	All	All lighting types

2. Proposed Substitution: See attachments

3. Reason for Substitution: Different Manufacturer

4. Attach complete technical data, catalog cuts, drawings, samples, etc. Exact models and description of products shall be noted with any deviation noted.

5. Include complete information on changes to Drawings, and/or Specifications which proposed substitution will require for its proper installation. Yes

6. Does the substitute affect dimensions shown on Drawings? No

6a. If so, how?

7. Describe the effect substitution has on other trades. None

8. Describe differences between proposed substitution and specified item. Different Manufacturer

9. Manufacturer's warranties of the proposed and specified items are: (X) Same ( ) Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item. The undersigned agrees to pay for changes to the building and systems design, including engineering and detailing costs caused by the requested substitution.

Page 1

SUBSTITUTION REQUEST FORM

Tacoma Fire Station #5
SPECIFICATION NO.: PW19-0306F

For Reviewer

☒ Approved for Bidding subject to review and approval of Submittals (and as noted below) ☐ Rejected - Inadequate Information

☐ Not Accepted ☐ Received Too Late

By Eric Roberts - Hultz|BHU Date 11/08/2019

Remarks

P2 luminaire is rejected. P2 luminaire to remain Insight Lighting's Adobe series as specified on luminaire schedule

Transmittal

Sea-Tac Lighting & Controls, LLC
15455 53rd Ave S
Tukwila WA 98188
Phone: (206) 575-6865
From: Denzel Jones

Project **Tacoma Fire Station #5**
Quote# SEATAC-WWA19-81304
Location Tacoma WA
Contact:

ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

- ☐ Drawings
- ☐ Prints
- ☐ Plans
- ☐ Specifications
- ☐ Information
- ☒ Submittals

Other:

THESE ARE TRANSMITTED FOR:

- ☒ Prior Approval
- ☐ Approval
- ☐ Approval as Submitted
- ☐ Approval as Noted
- ☐ Resubmittal for Approval
- ☐ Corrections
- ☐ Your Use
- ☐ Review and Comment
- ☐ Record

Bids due on:
Other:

Type	MFG	Part	Est. Lead
		SUBSTITUTION REQUEST FORM	
A1 HEAD	McGraw-Edison	GLEON-AF-04-LED-E1-T3-XX-MS/DIM-L40W	
A1 POLE	McGraw-Edison	SSS-XX-25-S-XX	
L1	Pinnacle Arch. Lighting Inc.	LF22-A-CL8353000-XX-U-OL1-1-O-W	
L2	Metalux 2X2 FPANEL 3200L, 35K, 0-10V	22FP3235C	2 Business D
L3	Pinnacle Arch. Lighting Inc.	LF22-A-CL8353600-XX-U-OL1-1-O-W	
L4	Design Plan	855-L-4-135-1-XX-C-C	
P1	Metalux **Item Note:** Aircraft Cable Mount	HBLED-LD5-12SE-N-UNV-L840-1-CD-1-U-Y-TOGGLE	
P2	Tech Lighting TIMBRE LS BK LED	700LSTMBB-LED930	
P2 ALT	Tech Lighting SPAN LINEAR SUS BK LED	700LSSPAN48B-LED930	
P3	Metalux 4' LED STRIP 2L UNV 4200L 4K NON-DIM	4ST2L4040R-AYC-CHAIN/SET	5 Business D
R1	Portfolio	LD4B10D010 EU4B10208035 4LBWXX	
R2	Portfolio **Item Note:** Wet Location	LD4B20D010 EU4B10208035 4LBWXX	
R3	Liton Lighting	LCMPD7RXUE-D10-T30	
S1	Invue	VFS-K-B40-5-LED-E1-XX	
UC1	Halo	HU1109D9SX	
UC4	Halo	HU1148D9SX	
W1	Tech Lighting LUFE SQ 36 BATH SN LED930	700BCLUFS36S-LED930	
W2	McGraw-Edison **Item Note:** Confirm Shape	ISX-AF-450-LED-E1-XX	
W3	GVA Lighting Inc	STR9W1200BM25W4000K80AC	
X1	Emergilite 6IN 120/277V UNIV EDGE-LIT GRN	PAG6	
X2	Emergilite UNIT 120/277V HI-OUTPUT LED DIAG	EL-2RHL-AD	

GEOTECHNICAL

DRAWINGS:

ADD: Revision 1 text and date to the Revision Portion of the title block for the referenced drawings. This revision adds an updated engineer stamp to the drawings.
ADD: Addendum 2 text and date to the Revision Portion of the title block for the referenced drawings. This note identifies that there is a datum difference between the plans and Geotech report.

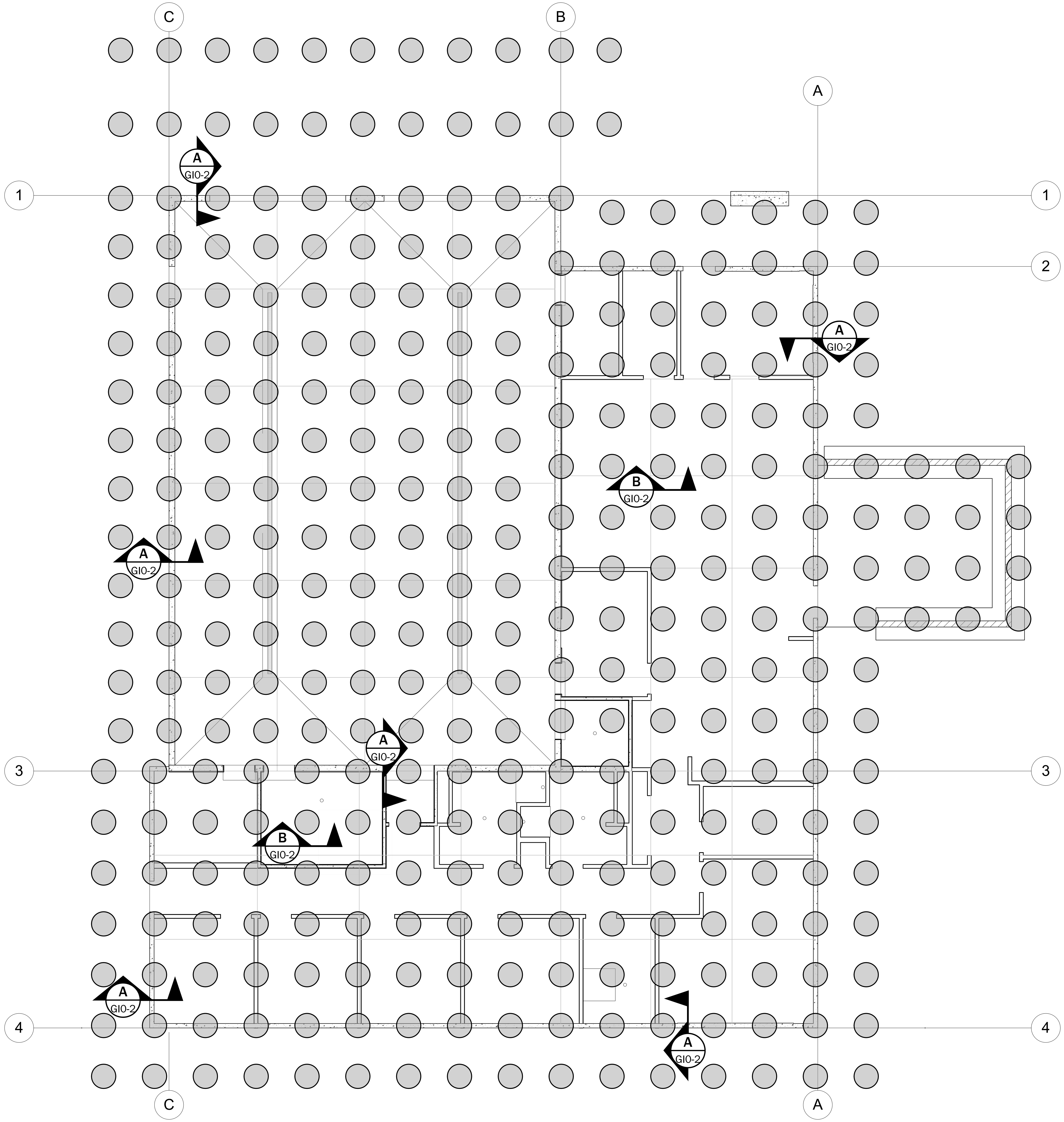
SHEET GI0-1 GROUND IMPROVEMENT PLAN

REVISE Note 4 to read:
"Stone Columns shall extend to elevation ~~-25~~ **-28** feet" as shown on the Addendum drawing.

This revision reflects the project vertical datum as shown on the Addendum drawing, and does not change the design length of the columns.

SHEET GI0-2 GROUND IMPROVEMENT PLAN

REVISE: Minimum bottom of stone column elevation to be -28 ft as shown on the Addendum drawing. This does not change the design length of the columns.



LEGEND

● 30-IN DIA STONE COLUMNS - 331 TOTAL
5FT - 5.25FT NOMINAL SPACING (SEE LAYOUT)

NOTES:

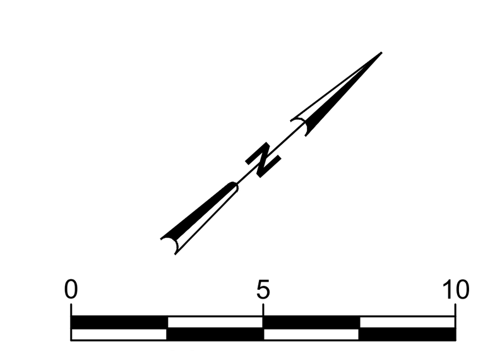
1. CONTRACTOR TO PROVIDE LOCATION AND DEPTH OF EXISTING UTILITIES TO THE ENGINEER TO CONFIRM CLEARANCE FOR STONE COLUMNS. STONE COLUMN LAYOUT MAY REQUIRE FIELD MODIFICATIONS TO RESOLVE CONFLICTS.
2. FOR STONE COLUMN INSTALLATION REQUIREMENTS SEE SPECIFICATIONS SHEET GIO-3.
3. TOP OF FINISHED STONE COLUMN ELEVATION SHALL BE AT THE DESIGN BOTTOM OF FOOTING ELEVATION BELOW FOOTINGS AND AT THE DESIGN SUBGRADE ELEVATION BELOW SLAB ON GRADE AND PAVEMENT AREAS. THE CONTRACTOR SHALL PROVIDE AN INTACT, FULL DIAMETER STONE COLUMN AT THESE ELEVATIONS. IF INTACT COLUMNS ARE NOT PROVIDED AT THE DESIGN TOP OF COLUMN ELEVATION, THE CONTRACTOR SHALL OVEREXCAVATE TO EXPOSE INTACT STONE COLUMNS AND BACKFILL THE OVEREXCAVATION WITH STRUCTURAL FILL AT NO EXPENSE TO THE OWNER.
4. (2) STONE COLUMNS SHALL EXTEND TO ELEVATION -28 FEET. ACTUAL TIP ELEVATION AND CONSTRUCTION OF STONE COLUMNS SHALL BE FIELD VERIFIED BY BOTH THE DESIGN ENGINEER AND GEOTECHNICAL ENGINEER.
5. STONE COLUMN MATERIAL: REFER TO SPECIFICATIONS SHEET GIO-3 FOR ADDITIONAL STONE COLUMN MATERIAL REQUIREMENTS.
6. ALL NEW UTILITIES AND BELOW GRADE STRUCTURAL ELEMENTS SHALL BE INSTALLED AFTER STONE COLUMN INSTALLATION.

REFERENCE: SLAB AND FOUNDATION PLAN PROVIDED BY LAWHEAD ARCHITECTS ON JULY 18, 2019.

DATUM:

HORIZONTAL = NAD83, WA STATE PLANE, SOUTH ZONE, US FOOT.

VERTICAL = NGVD29



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(1) SIGNATURE...

BRETT EDWARD LARABEE
STATE OF WASHINGTON
53210
REGISTERED
PROFESSIONAL ENGINEER
[illegible]

GEOENGINEERS

OWNER...

FIRE
TACOMA
DEPT.

(1) 9/10/19 BEL
COMMENT MEMO #1

(2) 11/7/19 BEL
STONE COLUMN TIP ELEVATION ADJUSTED TO REFLECT PROJECT DATUM AND SITE SURVEY.

Tacoma Fire Station #5

3510 E. 11th Street, Tacoma, WA 98421

PHASE...

Bid Set

JOB NO...

17-04

DATE...

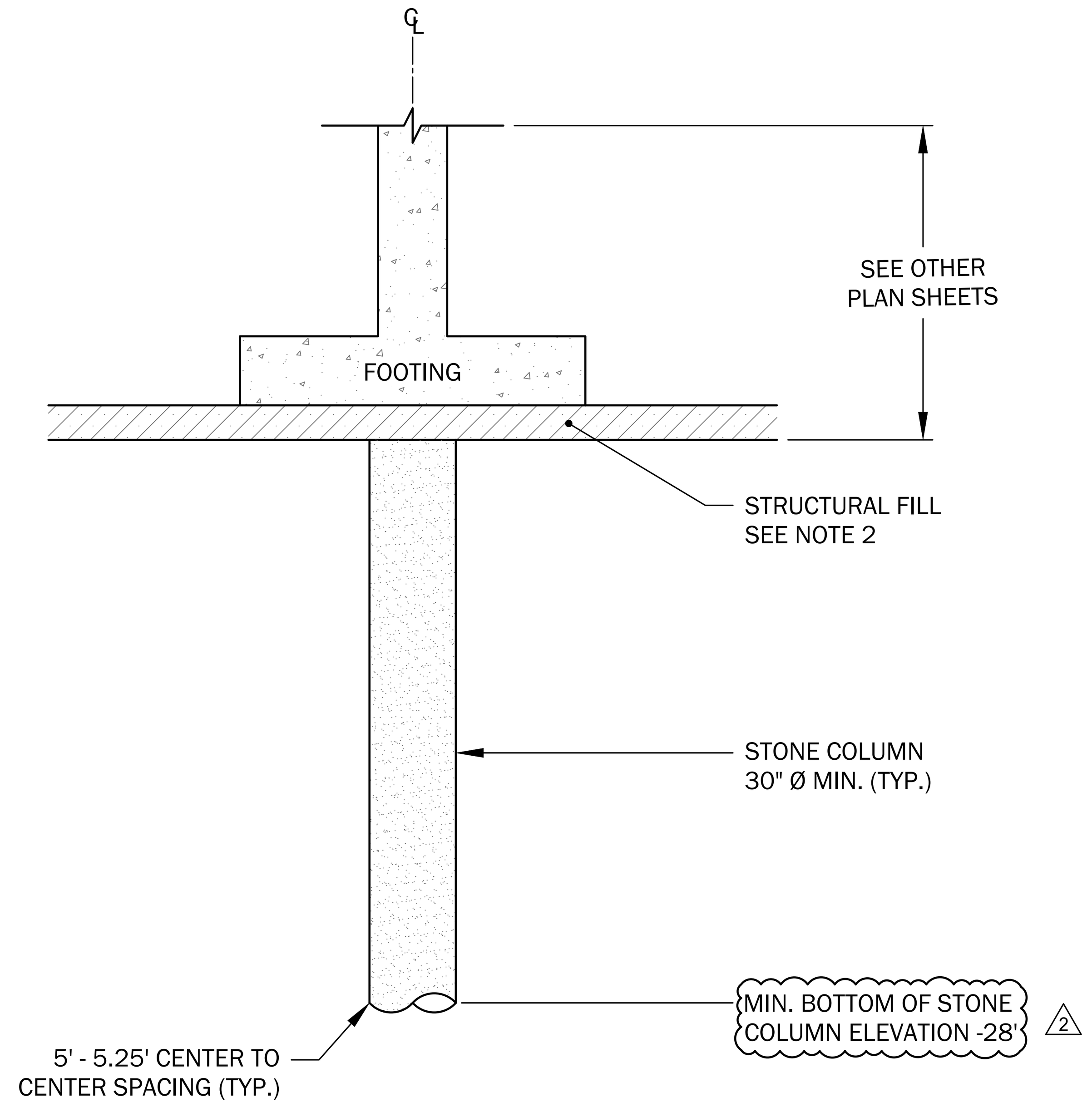
9/24/19

SHEET TITLE...

Ground Improvement Plan

SHEET NO...

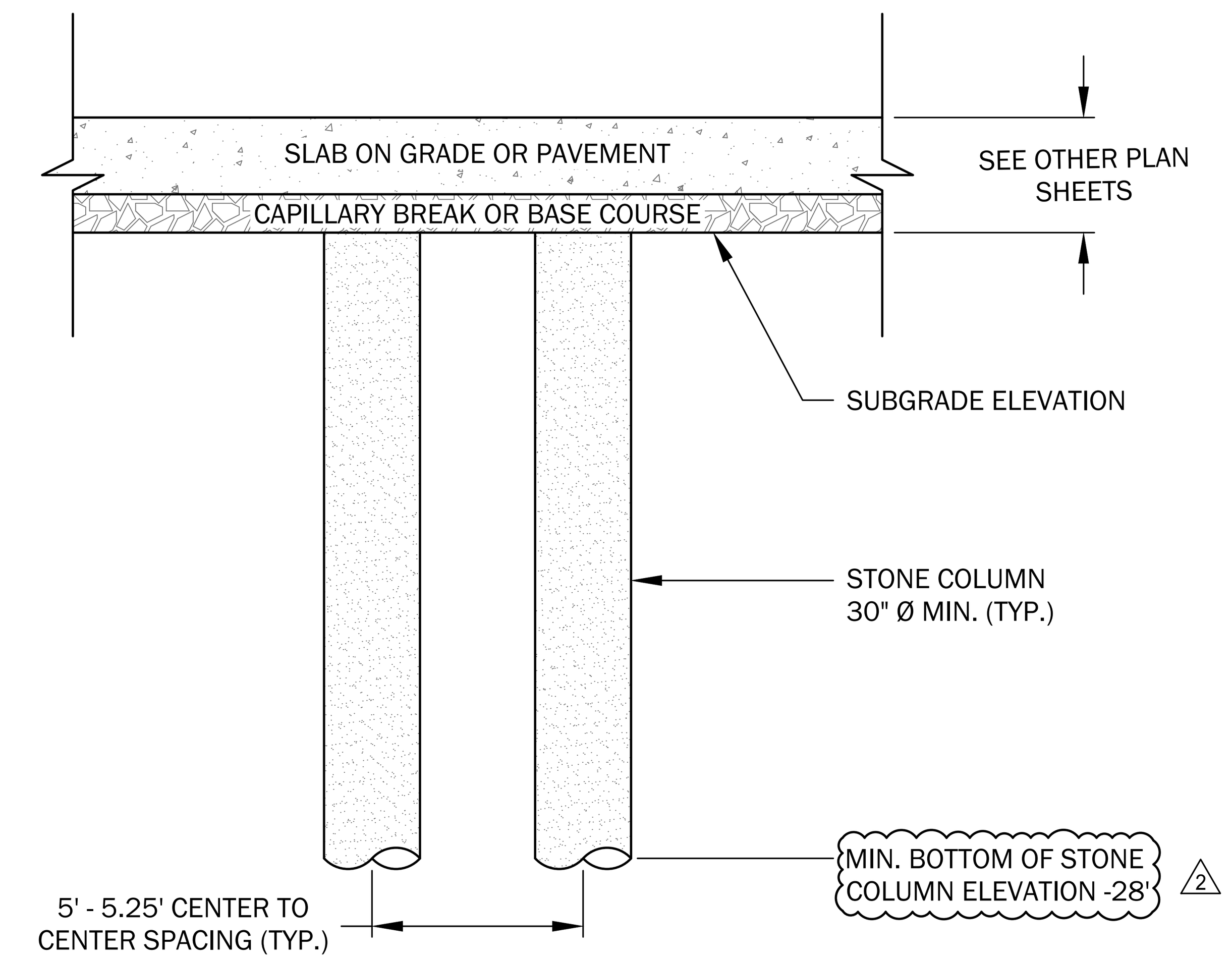
GI0-1



TYPICAL GROUND IMPROVEMENT SECTION BELOW FOOTING

SCALE: NOT TO SCALE

A GI0-1



TYPICAL GROUND IMPROVEMENT SECTION BELOW SLAB ON GRADE AND PAVEMENTS

SCALE: NOT TO SCALE

B GI0-1

NOTES:

1. TARGET STONE COLUMN VOLUME IS A MINIMUM OF 4.9 FT^3 PER VERTICAL FOOT. TARGET REPLACEMENT RATIO IS 15 PERCENT.
2. STRUCTURAL FILL MAY BE PLACED BETWEEN THE TOPS OF STONE COLUMNS AND BOTTOM OF FOOTING. THE STRUCTURAL FILL SHALL BE PLACED IN ACCORDANCE WITH RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER AND SUITABLE FOR SUPPORT OF THE FOUNDATION LOADS. THE CRUSHED ROCK SHALL BE PLACED IN A MAXIMUM 12-INCH LIFTS AND COMPACTED TO A FIRM AND UNYIELDING CONDITION.
3. PRIOR TO THE PLACEMENT OF STRUCTURAL FILL OR STRUCTURAL ELEMENTS THE TOP OF STONE COLUMNS SHALL BE COMPACTED WITH EITHER A STANDARD, HAND OPERATED IMPACT COMPACTOR OR STATIC ROLLED WITH A LARGE SMOOTH DRUM ROLLER. COMPACTION SHOULD BE COMPLETED OVER THE ENTIRE GROUND IMPROVEMENT AREA. CARE SHOULD BE TAKEN TO AVOID COMPACTION OF ANY SENSITIVE SILTY SUBGRADES SPECIFIC RECOMMENDATIONS SHALL BE PROVIDED BY THE GEOTECHNICAL ENGINEER.
4. PONDING OF WATER SHOULD BE AVOIDED. OVER EXCAVATION OF ANY LOOSE, WET, OR SOFTENED SOILS SHOULD BE MADE PRIOR TO PLACEMENT OF BACKFILL OR INSTALLATION OF STRUCTURAL ELEMENTS.
5. BACKFILL PLACEMENT AND COMPACTION OF STRUCTURAL FILL SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

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STONE COLUMN TIP ELEVATION ADJUSTED TO REFLECT PROJECT DATUM AND SITE SURVEY.

Tacoma Fire Station #5

3510 E. 11th Street, Tacoma, WA 98421

PHASE...
Bid Set

JOB NO...
17-04

DATE...
9/24/19

SHEET TITLE...
Section Details

SHEET NO...
GI0-2

STONE COLUMNS

PART 1–GENERAL

1.1 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

2 B. GEOTECHNICAL INFORMATION:

1. GEOTECHNICAL ENGINEERING REPORT BY GEOENGINEERS, INC. TITLED “GEOTECHNICAL ENGINEERING SERVICES REPORT, PORT FIRE STATION NUMBER 5, TACOMA, WASHINGTON” DATED APRIL 11, 2018
2. GEOTECHNICAL ENGINEERING REPORT ADDENDUM BY GEOENGINEERS, INC TITLED “ REPORT ADDENDUM #1” DATED SEPTEMBER 21, 2018
3. GEOTECHNICAL ENGINEERING REPORT ADDENDUM BY GEOENGINEERS, INC TITLED “ GEOTECHNICAL REPORT ADDENDUM 2, GROUND IMPROVEMENT DESIGN SERVICES” DATED JUNE 14, 2019

C. CONTRACT DRAWINGS:

1. 100% SCHEMATIC DESIGN DRAWINGS FOR CITY OF TACOMA FIRE STATION #5 (TIDEFLATS) DATED FEBRUARY 25, 2019.

D. 2015 INTERNATIONAL BUILDING CODE.

E. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATION 29 CFR PART 1926 -OCCUPATIONAL SAFETY AND HEALTH.

1.2 DESCRIPTION OF WORK

A. THE WORK SHALL CONSIST OF CONSTRUCTING STONE COLUMNS AS SHOWN ON THE DRAWINGS. THE WORK COVERED BY THIS SPECIFICATION CONSISTS OF PROVIDING ALL SUPERVISION, LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO CONSTRUCT STONE COLUMNS, BY THE DRY, BOTTOM-FEED METHOD, TO CONSTRUCT STONE COLUMNS AT THE LOCATIONS, TO THE DEPTHS, AND TO THE REQUIREMENTS SHOWN ON THE DRAWINGS AND THESE SPECIFICATIONS. THE DOCUMENTATION OF THE STONE COLUMN INSTALLATIONS IS INCLUDED IN THE WORK SCOPE.

B. STONE COLUMN CONSTRUCTION, BY THE DRY, BOTTOM-FEED METHOD, INCLUDES, BUT IS NOT LIMITED TO:

1. FURNISH CRUSHED STONE TO THE JOB SITE.
2. FURNISH ALL EQUIPMENT, POWER, AIR, AND OTHER NECESSARY ITEMS REQUIRED FOR STONE COLUMN INSTALLATION.
3. COORDINATE WITH THE EARTHWORK CONTRACTOR TO CONSTRUCT WORKING PAD, IF NECESSARY, TO ACCESS JOB SITE AND WORK AREA. WORKING PAD CONSTRUCTION IS PART OF THE EARTHWORK CONTRACTOR'S SCOPE.
4. PROVIDE SHIELDING TO CONTAIN FLYING AGGREGATES AND DEBRIS THAT MAY BE GENERATED DURING THE PLACEMENT OF THE STONE COLUMNS.
5. CONSTRUCT STONE COLUMNS AS SHOWN ON THE DRAWINGS AND PER THE REQUIREMENTS OUTLINED IN THESE SPECIFICATIONS.
6. COORDINATE WITH EARTHWORK CONTRACTOR TO REMOVE EQUIPMENT, SURPLUS MATERIALS AND ANY WASTE PRODUCTS GENERATED FROM THE SITE AND RESTORE SITE GRADES TO THE SATISFACTION OF THE OWNER. REMOVAL OF WASTE PRODUCTS GENERATED FROM THE SITE IS PART OF THE EARTHWORK CONTRACTOR'S SCOPE.
7. COMPLY WITH ALL LOCAL, STATE, AND FEDERAL SAFETY REQUIREMENTS.

1.3 SITE CONDITIONS

2 A. THE OWNER COMMISSIONED A SUBSURFACE INVESTIGATION AND A GEOTECHNICAL ENGINEERING REPORT FOR THIS PROJECT. THE INFORMATION IS AVAILABLE FOR REVIEW IN THE PROJECT GEOTECHNICAL REPORT PREPARED BY GEOENGINEERS, INC. TITLED “GEOTECHNICAL ENGINEERING SERVICES REPORT, PORT FIRE STATION NUMBER 5, TACOMA, WA” DATED APRIL 11, 2018.

B. IF SUBSURFACE CONDITIONS DIFFERENT FROM THOSE ASSUMED FOR DESIGN OF THE PROJECT ARE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IN WRITING.

1.4 SUBMITTALS

A. THE FOLLOWING SUBMITTALS ARE REQUIRED.

3. WORK PLAN FOR OWNER'S APPROVAL PRIOR TO BEGINNING WORK.

a. A WRITTEN WORK PLAN FOR ACCOMPLISHING THE WORK DESCRIBED IN THIS SECTION AND SHOWN ON THE DRAWINGS. THE WRITTEN PROCEDURE SHALL:

i. INCLUDE A DETAILED DESCRIPTION OF THE EQUIPMENT AND TECHNIQUES TO BE USED.

ii. SPECIFICALLY DESCRIBE HOW THE EQUIPMENT AND TECHNIQUES SHALL BE USED TO BUILD THE STONE COLUMNS PER THE SPECIFICATIONS AND DRAWINGS. INCLUDE SPECIFIC DESCRIPTIONS OF HOW THE CONTRACTOR WILL ADDRESS VARIABILITY OF THE SUBSURFACE STRATIGRAPHY AND ACHIEVE THE STONE VOLUME, INSTALLATION ELEVATIONS AND ALIGNMENTS SHOWN ON THE CONTRACT DOCUMENTS.

iii. SPECIFICALLY DESCRIBE HOW THE EQUIPMENT AND TECHNIQUES WILL BE USED TO PENETRATE THE SOILS INCLUDING OBSTRUCTIONS DESCRIBED IN THE GEOTECHNICAL REPORT.

iv. DESCRIBE THE REFUSAL CRITERIA TO BE APPLIED WHEN ADVANCING THE VIBRATORY PROBE, AS WELL AS THE RESISTANCE CRITERIA (AND METHOD OF MEASUREMENT) TO BE APPLIED WHEN INJECTING THE STONES IN THE VARIOUS STRATA THAT UNDERLIE THE SITE. IF REFUSAL IS NOT MET DURING INSTALLATION OF STONE COLUMN, THE CONTRACTOR SHALL SUBMIT TO THE OWNER REVISED PLANS AND PROCEDURES TO BRING INSTALLATION IN THOSE AREAS INTO CONFORMANCE WITH THE SPECIFICATIONS AND DRAWINGS.

v. DESCRIBE THE QUALITY CONTROL AND DOCUMENTATION METHODS TO BE USED AND SUBMIT EXAMPLES OF THE DOCUMENTATION FORMS AND REPORTS. PROVIDE THE NAME, TELEPHONE NUMBERS, AND EMAIL ADDRESS, FOR THE PERSON RESPONSIBLE FOR THE CONTRACTOR'S QUALITY CONTROL. DOCUMENTATION EXAMPLES SUBMITTED SHALL INCLUDE THE MINIMUM DOCUMENTATION REQUIRED.

vi. DESCRIBE THE MEASUREMENT PROCEDURES TO BE USED FOR DETERMINING THE TONNAGE OR QUANTITY OF STONE INJECTED IN THE VARIOUS STRATA THAT UNDERLIE THE SITE.

vii. DESCRIBE PROPOSED METHODS FOR SUBGRADE PROTECTION, MINIMIZING SOIL RETURN TO THE GROUND SURFACE, SITE CLEANUP AND SITE GRADE RESTORATION. SPECIFICALLY, STATE WHO (GENERAL CONTRACTOR OR SUBCONTRACTOR) WILL BE RESPONSIBLE FOR SITE CLEANUP AND RESTORING SITE GRADES.

b. THE SOURCE(S) OF CRUSHED STONE INCLUDING THE CRUSHED STONE BACKFILL LABORATORY TEST RESULTS, FOR EACH PROPOSED STONE SOURCE, ACCORDING TO THE REQUIREMENTS.

c. A WRITTEN SCHEDULE FOR COMPLETING THE WORK DESCRIBED IN THIS SPECIFICATION AND SHOWN ON THE DRAWINGS. THE SCHEDULE SHALL SHOW THE CONTRACTOR'S PLANNED NUMBER OF MACHINES, NUMBER OF SHIFTS, AND WORKING HOURS.

d. STATIONING, LIMITS, PATTERN SPACING, AND DEPTHS FOR THE STONE COLUMN WORK ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL SUBMIT A PLAN SHOWING THE ANTICIPATED INSTALLATION ORDER.

e. PLANS FOR DELIVERY, STOCKPILING AND DISTRIBUTION OF STONE. SPECIFIC LOCATIONS, SIZE, AND QUANTITIES ARE TO BE SHOWN FOR STOCKPILE SITES. DELIVERY, STOCKPILING AND HAUL DISTRIBUTION SHALL NOT BEGIN UNTIL SUBMITTAL IS APPROVED BY THE OWNER.

2. DAILY DOCUMENTATION

a. SUBMIT LOAD TICKETS OF STONE DELIVERED TO THE SITE.

b. FURNISH TO THE OWNER AT THE BEGINNING OF EACH WORKDAY, THE DAILY QUALITY ASSURANCE DOCUMENTATION, AS SPECIFIED BELOW, FOR THE WORK COMPLETED THE PREVIOUS DAY FOR EACH SHIFT AND EACH RIG.

3. CRUSHED STONE TEST RESULTS SUBMITTALS

a. FOR STONE SOURCES PREVIOUSLY APPROVED, THE CONTRACTOR SHALL SUPPLY LABORATORY TEST RESULTS, PER THE REQUIREMENTS OF PARAGRAPH 2.1.B, FOR A REPRESENTATIVE SAMPLE OF EACH 10,000 TONS OF CRUSHED STONE DELIVERED TO THE SITE. THE CONFIRMATION TEST RESULTS SHOULD BE SUBMITTED WITHIN ONE WEEK OF COLLECTION OF THE SAMPLE. THE SAMPLE SHALL BE COLLECTED WITHIN ONE WEEK OF ITS DELIVERY TO THE SITE.

b. FOR STONE SOURCES NOT PREVIOUSLY APPROVED, THE CONTRACTOR SHALL SUPPLY THE LABORATORY TEST RESULTS, PER THE REQUIREMENTS BELOW, FOR APPROVAL AT LEAST 7 CALENDAR DAYS PRIOR TO DELIVERY TO THE SITE.

4. COPY OF THE SCALE CERTIFICATION.

1.5 QUALITY ASSURANCE

A. TESTING

1. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PROVIDE THE CRUSHED STONE TESTING, AS DESCRIBED BELOW.

B. DOCUMENTATION

1. CONTRACTOR SHALL INSTITUTE AND MAINTAIN A MONITORING AND DOCUMENTATION PROGRAM DURING THE INSTALLATION OF ALL STONE COLUMNS. THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS TO DOCUMENT THE STONE COLUMN INSTALLATION AND DENSIFICATION OPERATIONS INCLUDING THE COLUMN DIAMETERS ACHIEVED. THE CONTRACTOR SHALL PROVIDE COMPETENT AND QUALIFIED PERSONNEL TO CONTINUOUSLY OBSERVE AND RECORD THE REQUIRED DATA. THE PROGRAM SHALL INCLUDE, BUT IS NOT LIMITED TO THE INSPECTION, TESTING, AND DOCUMENTATION OF THE FOLLOWING:

a. DAILY DOCUMENTATION OF THE STONE COLUMN CONSTRUCTION AND WORK AREAS. THE DAILY REPORT SHALL SUMMARIZE ALL WORK ITEMS PERFORMED, INCLUDING BUT NOT LIMITED TO: TONNAGE OF STONE DELIVERED TO THE SITE AND COLUMNS INSTALLED. THE DAILY REPORT SHALL INCLUDE FOR EACH MACHINE AND SHIFT THE FOLLOWING:

i. WORKING HOURS AND TOTAL HOURS.

ii. NUMBER AND DEPTH OF STONE COLUMNS INSTALLED.

iii. MAP, SKETCH, OR MARKUP OF PLAN DRAWING SHOWING LOCATIONS OF STONE COLUMNS INSTALLED BY EACH MACHINE DURING EACH SHIFT.

iv. TOTAL WEIGHT AND SOURCE OF CRUSHED STONE DELIVERED TO JOB SITE.

v. TOTAL WEIGHT OF CRUSHED STONE BACKFILL PLACED IN THE GROUND.

b. TABULATED DATA SHALL BE PROVIDED FOR EACH STONE COLUMN. THE DATA FOR EACH STONE COLUMN SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

i. STONE COLUMN GRID NUMBER AS INDICATED ON THE DRAWINGS.

ii. DATE OF INSTALLATION.

iii. GROUND SURFACE ELEVATION AT COLUMN LOCATION.

iv. BEGINNING AND COMPLETION TIMES FOR MAJOR ACTIVITIES, INCLUDING, TIME TO PENETRATE AND TIME TO BACKFILL COLUMN.

v. TOP AND BOTTOM DEPTHS AND ELEVATIONS OF TREATED INTERVAL.

vi. WEIGHT OF STONE PLACED OVER REPRESENTATIVE ELEVATION INTERVALS, AND OVER ENTIRE TREATED DEPTH.

vii. ESTIMATED VOLUME OF STONE INJECTED OVER REPRESENTATIVE ELEVATION INTERVALS, AND OVER ENTIRE TREATED DEPTH. REPRESENTATIVE ELEVATION INTERVALS SHALL NOT BE GREATER THAN 5 FEET.

viii. LENGTH OF ANY UNTREATED INTERVAL OVERLYING TOP OF COLUMN.

ix. VIBRATORY EQUIPMENT POWER CONSUMPTION (OR OTHER INDICATOR OF RESISTANCE) DURING PENETRATION AND DURING COMPACTION OF THE COLUMN.

x. DETAILS OF OBSTRUCTIONS, DELAYS, AND/OR ANY UNUSUAL CONDITIONS ENCOUNTERED.

xi. NOTATION THAT THE CONSTRUCTED STONE COLUMN EITHER IS CONSISTENT WITH THE COLUMN SECTION DETAIL SHOWN ON THE DRAWINGS OR DESCRIPTION OF DEVIATIONS FROM THAT DETAIL.

c. THE RECORDED DAILY DOCUMENTATION SHALL BE SIGNED BY THE CONTRACTOR'S REPRESENTATIVE AND THE OWNER'S REPRESENTATIVE INSPECTOR DAILY AND SHALL BE FURNISHED TO THE OWNER DAILY. TABULATED DATA SHALL BE SUBMITTED AT LEAST WEEKLY.

d. AT THE COMPLETION OF THE GROUND TREATMENT WORK, THE CONTRACTOR SHALL SUBMIT:

i. A REPORT TO THE OWNER THAT PROVIDES DETAILS OF THE INSTALLATION METHODS, PRODUCTION RATES, AND STONE CONSUMPTION.

ii. AN AS-BUILT DRAWING SHOWING THE LOCATIONS, GRID NUMBERS, AND DEPTHS OF THE STONE COLUMNS. THE DRAWING SHALL BE PLOTTED IN AUTOCAD 2008, OR LATER VERSION, AND SHALL SHOW THE NORTHING AND EASTING OF EACH STONE COLUMN IN THE PROJECT COORDINATE SYSTEM. TWO PAPER COPIES AND A COMPACT DISK CONTAINING THE ELECTRONIC FILE SHALL BE SUBMITTED.

e. THE OWNER MAY HAVE A FULL-TIME OR PART-TIME REPRESENTATIVE OBSERVE AND DOCUMENT THE STONE COLUMN RELATED CONSTRUCTION. THE OWNER MAY OBTAIN SAMPLES FOR TESTING FROM THE STONE SOURCE(S) OR FROM THE STONE STOCKPILES AT THE SITE. THE CONTRACTOR SHALL PROVIDE THE OWNER ACCESS TO THE SOURCE OR STOCKPILES AS REQUESTED.

1.6 TOLERANCES

A. THE TARGET STONE VOLUME IS SHOWN ON THE DRAWINGS. THE INJECTED VOLUME OF THE STONE WITHIN THE REPRESENTATIVE ELEVATION INTERVALS SHALL BE ESTIMATED USING THE MEASURED STONE CONSUMPTION USED TO FILL THE HOLE AND A STONE DENSITY DETERMINED BY ASTM C 29.

B. STONE VOLUME: THE AVERAGE VOLUME OF STONE SHALL NOT BE LESS THAN THE TARGET STONE VOLUME OVER THE FULL INSTALLATION DEPTH. IF THESE TOLERANCES ARE NOT MET, THE CONTRACTOR SHALL SUBMIT TO THE OWNER REVISED PLANS AND PROCEDURES TO BRING INSTALLATIONS IN THOSE AREAS INTO CONFORMANCE WITH THE SPECIFICATIONS AND DRAWINGS.

C. HORIZONTAL LOCATION: THE CENTER OF THE VIBRATOR AT THE GROUND SURFACE SHALL BE NO MORE THAN 6 INCHES OFFSET FROM ITS SPECIFIED LOCATION, AS SHOWN ON THE DRAWINGS, UNLESS SPECIFICALLY APPROVED BY THE OWNER.

D. VERTICAL ALIGNMENT: THE AXIS OF THE STONE COLUMN, AS INDICATED BY THE TILT OF THE VIBRATOR AND FOLLOWER TUBES, SHALL NOT BE INCLINED MORE THAN 2 INCHES IN 10 FEET, UNLESS STATED OTHERWISE IN THE DRAWINGS.

PART 2 PRODUCTS

2.1. MATERIALS

A. STONE SOURCES: THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 7 CALENDAR DAYS BEFORE OPERATIONS BEGIN OR A NEW SOURCE OF CRUSHED STONE IS USED TO ALLOW THE OWNER TIME TO OBSERVE CONTRACTOR'S STONE SAMPLING AT THE SOURCE. CRUSHED STONE SHALL BE BROUGHT ONTO THE SITE ONLY AFTER RECEIVING WRITTEN AUTHORIZATION FROM THE OWNER.

B. STONE

1. THE STONE SHALL CONSIST OF HARD, DURABLE, WASHED, AND CRUSHED ROCK THAT IS FREE FROM ORGANIC OR OTHER DELETERIOUS MATERIAL.
2. THE STONE SHALL HAVE A MAXIMUM 40 PERCENT "LOS ANGELES WEAR" WITH 500 REVOLUTIONS WHEN TESTED IN ACCORDANCE WITH AASHTO T 96.
3. THE GRADATION OF STONE SHALL BE MEASURED BY ASTM D 422 AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO NO. 57 OR AS APPROVED BY THE OWNER:
4. THE MAXIMUM DIMENSION OF THE STONE IN ANY DIRECTION SHALL BE NO GREATER THAN TWICE THE MINIMUM GRADATION DIMENSION.
5. THE STONE SHALL HAVE A MINIMUM SPECIFIC GRAVITY OF 2.6, AS DETERMINED BY ASTM C 127.
6. THE STONE SHALL HAVE A WEIGHT LOSS OF LESS THAN 10 PERCENT WHEN TESTED FOR SULFATE SOUNDNESS PER ASTM C 88.
7. THE UNIT WEIGHT OF THE STONE SHALL BE MEASURED BY ASTM C 29.

C. NO CHANGES OR SUBSTITUTIONS OF STONE SOURCES, STONE CHARACTERISTICS, OR STONE GRADATIONS WILL BE ALLOWED WITHOUT WRITTEN APPROVAL OF THE OWNER.

2.1. EQUIPMENT

A. THE CONTRACTOR SHALL PROVIDE WELL-MAINTAINED, OPERATIONAL EQUIPMENT, TOOLS, AND MACHINES FOR USE IN THE PERFORMANCE OF THIS WORK.

B. THE VIBRATING PROBE SHALL BE OF THE BOTTOM-FEED TYPE AND SHALL PROVIDE ADEQUATE HORSEPOWER TO INSTALL THE STONE COLUMNS SHOWN ON THE DRAWINGS PER THE REQUIREMENTS OUTLINED IN THE SPECIFICATIONS. THE VIBRATOR EXTENSION TUBES SHALL BE MARKED IN 1-FOOT INCREMENTS FOR READILY DETERMINING VIBRATOR WORKING INCREMENTS AND TIP ELEVATION. NUMERICAL IDENTIFICATION SHOWING DEPTH SHALL BE PROVIDED AT 5-FOOT INTERVALS ON THE EXTENSION TUBES.

C. DOWN-HOLE VIBRATOR: THE VIBRATOR SHALL BE CAPABLE OF PROVIDING AT LEAST 80 HP OF RATED ENERGY AND A CENTRIFUGAL FORCE OF 15 TONS. AN APPROPRIATE METERING DEVICE SHOULD BE PROVIDED AT SUCH A LOCATION THAT INSPECTION OF AMPERAGE INCREASE MAY BE VERIFIED DURING THE OPERATION OF THE EQUIPMENT. THE METERING DEVICE MAY BE AN AMMETER DIRECTLY INDICATING THE PERFORMANCE OF THE VIBRATOR TIP. THE VIBRATOR TIP SHALL HAVE A MINIMUM DIAMETER OF 16 INCHES AND BE CAPABLE OF CREATING STONE AGGREGATE COLUMNS WITH A COMPLETED DIAMETER OF 2.5 FEET. COMPLETE EQUIPMENT SPECIFICATIONS SHOULD BE SUBMITTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF THE FIELDWORK.

PART 3 EXECUTION

2.1. METHOD

A. THE WORK SHALL BE ACCOMPLISHED BY DRY, BOTTOM-FEED, VIBRO-DISPLACEMENT.

3.1. PENETRATION

A. TREATMENT DEPTH: EXCEPT WHERE OBSTRUCTIONS ARE ENCOUNTERED, THE VIBRATOR SHALL BE ADVANCED TO THE FULL TREATMENT DEPTH AS INDICATED ON THE DRAWINGS.

B. OBSTRUCTIONS

1. THE PRESENCE OF ANY OBSTRUCTIONS SHALL BE REPORTED TO THE OWNER AND DESCRIBED IN THE DAILY DOCUMENTATION REPORTS.
2. IF THE CONTRACTOR ENCOUNTERS AN OBSTRUCTION THAT PREVENTS THE PENETRATION OF THE VIBRATOR TO THE DEPTH SHOWN ON THE DRAWINGS AT ONE ISOLATED TREATMENT LOCATION OR TWO ADJACENT LOCATIONS, THE CONTRACTOR SHALL, SUBJECT TO THE OWNERS APPROVAL, BACKFILL IN A NORMAL MANNER AND MOVE TO THE NEXT LOCATION.
3. WHEN OBSTRUCTIONS PREVENT THE ADVANCEMENT OF THE VIBRATORY PROBE OVER AN AREA OF MULTIPLE COLUMNS, THE OWNER MAY ALLOW ONE OR MORE OF THE FOLLOWING:

a. ADJUSTMENT OF THE LOCATION OR SPACING OF THE TREATMENT GRID.

b. PREDRILLING THROUGH THE OBSTRUCTION.

c. REMOVE THE OBSTRUCTION, BACKFILL THE HOLE AS REQUIRED TO CREATE A SUITABLE WORKING PAD FOR STONE COLUMN INSTALLATION, AND THEN COMMENCE STONE COLUMN CONSTRUCTION AT PLANNED LOCATIONS.

3.1. STONE COLUMN BACKFILL

A. AFTER PENETRATION OF THE VIBRATOR TO THE FULL TREATMENT DEPTH AS SHOWN ON THE DRAWINGS, THE VIBRATOR SHALL BE SLOWLY WITHDRAWN IN 12- TO 24-INCH INCREMENTS, TO ALLOW PLACEMENT OF THE STONE.

B. THE STONE SHALL BE PLACED IN A MANNER THAT ALLOWS MEASUREMENT OF THE TONNAGE OR QUANTITY OF STONE PLACED IN THE COLUMN.

C. THE VIBRATOR SHALL BE RE-DRIVEN THROUGH EACH INCREMENT INTO THE NEWLY PLACED STONE UNTIL THE STONE COLUMNS INSTALLED MEET THE REQUIREMENTS SPECIFIED ON THE DRAWINGS AND SPECIFICATIONS.

D. NEAR THE GROUND SURFACE, THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO PREVENT UPLIFT OF THE GROUND DUE TO EXCESS AIR PRESSURE. THE AIR PRESSURE MUST BE ADJUSTED TO NOT CAUSE HEAVING OF SURFACE SOILS.

E. THE CONTRACTOR SHALL COMPLETE THE COLUMN INSTALLATIONS IN A MANNER THAT MINIMIZES WASTAGE OF STONE.

3.2. ACCEPTANCE TESTING

A. STONE COLUMN BACKFILL

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY OF THE STONE COLUMN BACKFILL AND SHALL PROVIDE ACCESS FOR THE OWNER TO TAKE RANDOM SAMPLES OF BACKFILL AND VERIFY GRADATION AS WELL AS TEST SPECIFIC GRAVITY AND UNIT WEIGHT.

B. STONE COLUMN INSTALLATION

1. THE ACCEPTANCE OF THE STONE COLUMN INSTALLATION WILL BE BASED ON STONE COLUMN VOLUME INJECTED PER THE SPECIFIED DEPTH INTERVALS EVIDENCED BY DAILY REPORTS.

C. CONE PENETRATION TESTS (CPTs) SHALL BE PERFORMED BY THE CONTRACTOR IN THE IMPROVEMENT AREA BEFORE AND AFTER STONE COLUMN INSTALLATION. CPT SOUNDINGS WILL BE COMPLETED TO DEPTHS EXTENDING 5 FEET BELOW THE STONE COLUMN TIP ELEVATION. THE SEISMIC CPTS ARE FOR USE BY THE ENGINEER TO EVALUATE GROUND IMPROVEMENT AND WILL BE USED AS PART OF THE ACCEPTANCE CRITERIA FOR THE CONTRACTORS' WORK. THE SEISMIC CPT PROGRAM SHALL INCLUDE THE FOLLOWING:

1. A MINIMUM OF TWO CPTS SHALL BE ADVANCED BEFORE THE START OF STONE COLUMN INSTALLATION. SEISMIC CPT LOCATIONS SHALL BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
2. A MINIMUM OF TWO CPTS SHALL BE ADVANCED AFTER STONE COLUMN INSTALLATION. THESE CPTS SHOULD BE LOCATED WITHIN A 10 FOOT HORIZONTAL DISTANCE OF THE CPTS DESCRIBED IN 3.1.C.1 AND SHOULD GENERALLY BE CENTERED BETWEEN STONE COLUMNS. STONE COLUMN CONSTRUCTION MUST BE COMPLETE FOR A MINIMUM OF TWO WEEKS BEFORE ADVANCING THE CPTS. ALL SEISMIC CPT'S SHALL EXTEND TO A DEPTH OF 5 FEET BELOW STONE COLUMN TIP ELEVATION. THE CPT'S SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM D 5778 AND PROVIDE A CONTINUOUS MEASUREMENT OF TIP RESISTANCE, FRICTION, PORE PRESSURE AND A DOWN HOLE SHEAR WAVE VELOCITY PROFILES BASED ON MEASUREMENTS AT 5-FOOT INTERVAL. A COMPLETE RECORD OF LOCATION, TIME, DATE AND TEST RESULTS MUST BE MAINTAINED FOR EACH CPT.
3. TESTS RESULTS FROM THE CPTs WILL BE PROVIDED TO THE GEOTECHNICAL ENGINEER TO EVALUATE DENSIFICATION OF THE IMPROVEMENT AREA. ADDITIONAL STONE COLUMNS MAY BE ADDED TO THE GROUND IMPROVEMENT LAYOUT OR THE MINIMUM DIAMETER MAY BE INCREASED IF MINIMUM IMPROVEMENT FACTOR OF 2.0 IN THE TIP RESISTANCE IS NOT ACHIEVED.

LAWHEAD
ARCHITECTS
P.S.

12342 NORTHUP WAY
BELLEVUE, WA 98005
(425) 556-1220
FAX (425) 556-1228

1 SIGNATURE...

BRETT EDWARD LARABEE
STATE OF WASHINGTON
[illegible] 9-23-19
53210
REGISTERED
PROFESSIONAL ENGINEER

GEOENGINEERS

OWNER...

FIRE
TACOMA
DEPT.

1 9/10/19 BEL
COMMENT MEMO #1

2 11/7/19 BEL
VERTICAL DATUM REFERENCED IN GEOTECHNICAL REPORTS DIFFERS FROM VERTICAL DATUM ON PROJECT PLANS.

Tacoma Fire Station #5

3510 E. 11th Street, Tacoma, WA 98421

PHASE...
Bid Set

JOB NO...
17-04

DATE...
9/24/19

SHEET TITLE...
Specifications

SHEET NO...
GI0-3

TACOMA POWER

3628 South 35th Street

Tacoma, Washington 98409-3192

TACOMA PUBLIC UTILITIES

LETTER OF AGREEMENT

July 22, 2019

Port Fire Station #5
Attn: Mina Zarelli
747 Market St. Rm 744
Tacoma, WA 98402

Subject: Primary Underground Electrical System with Secondary Connections for Port Fire Station # 5; located at 3510 E. 11th St.
Work Order: 10000127103

Dear Ms. Zarelli:

This letter is for your review, signature, and return to this office. The copy marked "Customer's Copy" is for your reference and files.

Tacoma Power will furnish the electrical portion of a primary underground system capable of supplying secondary service to the Port Fire Station # 5 project for a charge of $15,898.88. This charge is only for items that are listed below under Tacoma Power's Responsibility.

If Tacoma Power, at the request of the customer, has to perform any portion of the work during hours other than the normal working hours (8:00 a.m. to 4:30 p.m., Monday through Friday), the customer will be responsible for the additional cost for overtime.

Prices quoted are based upon engineering information received from you prior to the date of this letter. Should you desire to make changes after this agreement has been executed, additional engineering costs incurred shall be prepaid and are not refundable.

Charges stated for Tacoma Power's services, will be honored for a period of **90 days** from the date of this letter. After this time period has expired without our receipt of this letter signed by the customer and the total payment, Tacoma Power reserves the right to modify the charges.

Requirements contained in this letter for installation of service are in accordance with the current Customer Service Policies of Tacoma Power and are subject to change as the Customer Service Policies are changed.

Your check in the amount of $15,898.88, made payable to the "Tacoma City Treasurer" should be **returned with the signed documents**. You may, however, make an engineering deposit of $5,000.00. The balance due, $10,898.88, shall be paid in full before construction begins.

After the engineering fee/deposit is paid, Tacoma Power reserves the right to review and revise the cost and conditions, as applicable, for service if three (3) months pass without project construction being completed. Further, the developer agrees to pay Tacoma Power the revised cost and abide by the new conditions.

Developer/Customer's Responsibility:

The customer is responsible for furnishing the primary trench and maintaining the trench throughout all phases of construction. The customer is to provide a 5/8-inch minus crushed rock, compacted pad at all the vault locations, complete the backfill after the utility systems are installed, and provide the sand for shading the gas pipe when required.

a. The developer/customer shall be responsible to have the primary civil (trench, conduit, and vault) system and secondaries installed by a qualified electrical contractor licensed in the State of Washington under Chapter 19.28 RCW. All work must be completed in accordance with Tacoma Power's design, construction, and inspection standards.

b. If the developer or agent fails to properly install the civil system in accordance with Tacoma Power's drawings, standards, and as directed by Tacoma Power's T&D Construction Inspector, then that portion will be replaced, relocated, or revised by the customer at the customer's expense. Failure to make all corrections as specified by Tacoma Power will result in the customer paying for any costs incurred by Tacoma Power to make the corrections before service is provided. All secondary work must be inspected by a Tacoma Power Electrical Inspector.

c. Clearances from padmounted transformers to structures are measured from the nearest metal portion of the transformer to the structure or structure's overhang. The clearance from a building and/or overhang must be four (4) feet if the building has noncombustible walls and/or overhang (brick, concrete, steel, or stone) and eight (8) feet if the building has combustible walls and/or overhang. No doors, windows, stairways or other openings may be located within eight (8) feet of any transformer. A three (3) foot side clearance between the transformer and a driveway is required. This is measured from the outside of the transformer vault lid. Some of the lots may require an adjustment to the building placement to provide adequate clearance to our structures. See Standard A-UG-1200 for more details.

d. The developer/customer agrees to convey to Tacoma Power all required easements for our construction and maintenance of the primary electrical system. A "For Construction" print will not be issued until all required easements have been conveyed to Tacoma Power.

e. The developer/customer shall be responsible to contact and coordinate the construction activities with the other utilities (i.e., natural gas, telephone, and cable).

f. The developer/customer shall be responsible to have a licensed engineer or land surveyor provide for all property surveys, including setting and maintaining temporary

wooden hubs for lot or building site corners and establishing and maintaining finished elevations along Tacoma Power's underground electrical distribution system trench, and at structure locations. Tacoma Power will not be held responsible for the replacement of said corners that may be obliterated or lost during construction. Elevations at all breaks in grade along the trench and at all structure locations shall be marked on one print of the electrical layout and returned to Tacoma Power for construction purposes. Tacoma Power shall be notified in writing of any changes in elevations or plat layouts prior to installation of the underground distribution system. If any changes are made after Tacoma Power's facilities have been installed, the cost of relocating or revising Tacoma Power's facilities will be charged to the customer. Any deviation due to inadequate depth of coverage, as required by State Safety Codes, shall be at the developer's expense.

g. The developer/customer shall provide an all-weather access road to each structure (i.e., pole, transformer, junction box, switchgear, etc.). Access to transformers and structures will be on roadways rated for truck traffic suitable for Tacoma Power line construction vehicles.

Contractor's Responsibility:

After the "For Construction" drawing has been released by Tacoma Power, the contractor will be required to furnish and install the following in accordance with Tacoma Power's design, construction, and inspection standards:

Items listed below must be inspected and approved by Tacoma Power's T&D Construction Inspector. Call (253) 381-3023, 24-hours prior to any work being done.

a. Prior to any construction, the contractor shall contact the project engineer to schedule a pre-construction meeting.

b. The primary trench and conduit in accordance with Standard C-UG-1300. The conduit shall be Schedule 40 PVC gray electrical type or as shown on the Tacoma Power drawing. If the trench is more than four (4) feet deep, shoring will be required.

c. One (1) internally grounded, concrete transformer vault (No. 554 per Standard C-UG-2000) according to Standards A-UG-1200 and C-UG-1700 for three-phase transformer for site excavation and vault specifications, with location as shown on Tacoma Power's drawing.

d. Ten (10) feet of Schedule 80 PVC conduit on standoff brackets and one (1) Schedule 40 PVC or rigid steel elbow, as directed by Tacoma Power's T&D Construction Inspector, according to Standard C-UG-1200 at Tacoma Power's terminal poles. The risers are to be sized and installed as shown on the Tacoma Power provided drawing.

e. Guard posts shall be installed at transformer locations according to Standard C-UG-1400. The transformer will not be installed until an acceptable transformer guard is installed. Consult with Tacoma Power's T&D Construction Inspector for guard post requirements.

f. Proof primary conduit using a Tacoma Power approved mandrel after backfill. The conduit is to be fished and swabbed by the customer upon completion of the installation.

Proving shall then be demonstrated with Tacoma Power's authorized T&D Construction Inspector present. After proving that the conduit is free from obstruction, the customer shall leave a 1/8-inch diameter polypropylene fish cord in the conduit.

g. Obtain an electrical permit for any secondary work from Tacoma Power's Electrical Inspection Office. Call (253) 502-8277 for permit fees and other required information.

h. For services above 400 amps, an Electrical Plan Review Application and set of electrical plans must be submitted to Tacoma Power's Electrical Inspection Office for Review. The Plan Review Application and Instruction documents can be found at https://www.mytpu.org/tacomapower/electrical-permitting/electrical-inspection-permits/.

i. The contractor is responsible for all secondary conduits and cables from the transformer to the service point on the building, and data conduit as specified by Tacoma Power for remote meter reading, system automation or other Tacoma Power data needs. Any secondary cables pulled after the transformer is set will be done with the transformer in place at an additional fee. Installation of secondary conduit is to be inspected by the Electrical Inspection Office before backfill of the trench. Call (253) 502-8277, 24-hours prior to construction for inspection scheduling.

j. Obtain a copy of the following Tacoma Power Standards prior to construction: A-UG-1200, C-UG-1100, C-UG-1200, C-UG-1300, C-UG-1400, C-UG-1700, and C-UG-2000. These standards can be obtained from this office or from Tacoma Power's website (www.MyTPU.org/ConstructionStandards).

k. The contractor is responsible to have a copy of this letter and the standards available on the construction site.

Tacoma Power's Responsibility:

Tacoma Power will prepare a preliminary drawing for this project showing where the electrical facilities are to be installed. Preparation of this drawing will begin upon receipt of the payment and this Letter of Agreement signed by an authorized person. Depending on the workload, lead time until release of this drawing for review may take up to **six weeks**. Two copies of the preliminary drawing with a cover letter will be sent to the developer and other joint trench utilities for review and comments. After full payment has been received, all required easements have been secured, and the preliminary drawings that were sent for review and comments have been returned to Tacoma Power, a "**For Construction**" drawing will be issued. A **two-week** period will be required to schedule construction after the "For Construction" drawing is issued, then the following will be provided by Tacoma Power:

a. Frame the terminal pole and complete the terminal pole riser.

b. One (1) three-phase, 150 kVA, 208Y/120 volt padmount transformer on the customer-supplied concrete vault providing 4-wire service. The AIC at the transformer secondary bushings is 14,400 amps.

c. All necessary primary cables and terminations, and all secondary terminations at the transformer.

d. One (1) three-phase CT meter for 400 amp secondary service.

e. All other necessary overhead and underground facilities for providing electrical service.

If you have questions, please contact John Hilotin at (253) 502-8368.

Regards,

Chad Edinger, PE
Electrical Services Manager

JRH:mmp [JRH Port Fire Station 5 7-22-19]

Approved as to form:

Legal

Finance Director

Customer's Signature

(Print Name)

Date

QUESTIONS RECEIVED:

Question 1: Are the stated SBE LEAP Goals, regulated as Goals or Requirements?

Answer: If the distinction between “Goal” and “Requirements” are that one is voluntary and the other is mandatory, then the Local Employment Goal and Apprentice Utilization Goals are both “Requirements”. The SBE goal is not a requirement to be a responsive bidder, however it is a requirement to meet the utilization level indicated on any submitted bid.

Question 2: The Topographic Survey has a note under Vertical Datum stating: “NGVD 29 Contractor to verify datum to site features and control points provided.” Does this infer that we need to add 6.32 ft to the given elevations for MLLW or 3.47 ft to the given elevations to convert to the NAVD88 datum?

Answer: The datum is NGVD 29 per the city requirements. The statement, “NGVD 29 Contractor to verify datum to site features and control points provided.”, is used so that the contractor verifies his datum source to site features and the on-site control points provided. Meaning that whatever benchmarks are used they check the elevations of the on-site control points and storm and sewer structures to ensure that their control is in alignment with our topographic survey. NGVD 29 is the City standard, however NAVD88 and Port of Tacoma datum has been used on past and current projects in the area. Errors were corrected in the addendum drawings.

Question 3: When you look at Sheet WO-6, Sanitary Sewer at CO #1 in relation to the elevation of the Finish Floor of 12.23 on Sheet C3-O Utility Plan, the top of the clean out is about 6 ft higher than the slab and the ground is flat there. I have encountered this situation on the Hylebos Bridge next to this project.

Answer: Errors relating to the datum were corrected in the addendum drawings.

Question 4: Your Geotechnical report also references NAVD88 as being used for that document.

Answer: Correct. The Engineer has revised the plans in this addendum, but not the reports. The minimum stone column tip elevation shown on the plans was revised to reflect the project vertical datum NGVD29. The previously specified stone column tip elevation was based on the datum and ground surface elevation used and described in our geotechnical reports.

The revision does not change the design length of the columns (40 feet below existing grade) described in our Ground Improvement Design Report dated June 14, 2019. In our opinion this revision does not change the scope of work with regards to stone column installation and other modifications to the specifications are not needed.

Question 5: Sheet C2-0 shows an 8” PVC line going from a catch basin to a vault. Sht C3-0 shows it as 30 lf of 6” PVC. Please clarify.

Answer: Use Sheet C3-0 for correct size. Sheet C2-0 has been revised to remove extra label.

Question 6: Sheet WO-9 Right of Way Permits, Item A references 2014 Standard Spec for Road, Bridge and Municipal Construction. Do you mean the 2018 edition?

Answer: The City requires the specific notes included in Work Order (WO) plan set. Contractor shall use 2014 Standards as noted.

Question 7: Per Section 09 61 13, we are seeking a layout design for the “Non-skid pads, edge sealing compound and interior backup lines and borders” We need this for quantity and costing.

Answer: Exact layout design has not been finalized. See revised sketch with a typical striping layout for quantity and costing purposes.

Question 8: What Nederman system is specified for this project? The plans show a Magna Rail?

Answer: Magna Track Green is the correct model. The Plans have been revised by Addendum.

Question 9: Question 10: Is the US Digital ATX controller an Owner furnished item?

Answer: Yes.

END OF ADDENDUM NO. 2