



**CITY OF NOVI CITY COUNCIL
AUGUST 31, 2020**

SUBJECT: Consideration of approval to proceed with refurbishment of the Novi Road Water Tower, including approval of a contract with Protective Coatings Epoxy Systems for painting and other work in the amount of \$64,298.00, a letter agreement with T-Mobile Central LLC for temporary removal and replacement of its wireless antennas in the amount of \$62,895.00, and a \$25,000 contingency fund. Final approval as to the form of such agreements by the City Manager and City Attorney.

SUBMITTING DEPARTMENT: Parks, Recreation and Cultural Services

EXPENDITURE REQUIRED	<p>\$ 64,298 400-691.00-977.035</p> <p>\$ 62,895 400-691.00-977.035</p> <p><u>\$ 25,000</u> 400-691.00-977.035</p> <p>\$ 152,193</p>
AMOUNT BUDGETED	\$ 450,000
APPROPRIATION REQUIRED	\$ 152,193
LINE ITEM NUMBER	400-691.00-977.035

BACKGROUND INFORMATION: The approximately 3.64-acre parcel of property at the intersection of Novi Road and Trans-X Drive was purchased for potential park use, with the funding for the purchase coming from the Capital Improvement Program (CIP) millage. The iconic local water tower (non-functioning)– which has historically contained Novi-themed artwork (currently the Novi Special) – is located on the property.

Restoration of the tower has been in planning since the City acquired the property. Discussion with contractors and T-Mobile (the only active cell carrier) led to initial estimates of approximately \$450,000 in costs for sandblasting, painting, rental of cranes, placement of temporary cell towers, and engineering services.

City Administration was approached by a Novi resident with the possibility of receiving paint for the project through a donation from PPG Protective & Marine Coatings (PPG). In an effort to reduce costs to the City, PPG has agreed to the donation along with providing a qualified contractor to apply their product and oversee the project at considerable savings.

T-Mobile, the cellular provider with antennas on the site, has notified the City they will be making upgrades to their system requiring the removal of the existing equipment. Their contractor, Pyramid Network Services, LLC has helped negotiate the attached letter agreement with T-Mobile allowing the City to refurbish the water tower during the equipment replacement period by covering a portion of the costs related to antennae removals and replacements and utilizing temporary Cell On Wheels (COW).

The water tower's paint scheme and logo will be matched as closely as possible to the existing. As part of the agreement, the PPG logo will be placed on the tower.

The motion to approve includes the following:

1. Contract in the amount of \$64,298.00 with Protective Coatings Epoxy Systems for the cleaning, restoration, sandblasting, and painting of the City's water tower.
2. Letter agreement in the amount of \$62,895.00 with T-Mobile Central LLC for removal of existing antennas, installation of temporary Cell On Wheels (COW). Phase 1- \$29,370. Phase 2- \$33,525.
3. A contingency of \$25,000 for any additional labor costs or outstanding items as part of the project (note that the T-Mobile letter agreement requires a 10% contingency amount).

Included in the packet are contract agreements, the scope of work, and product details. Project dates will be mutually agreed on by Protective Coatings Epoxy Systems, Spectrum Construction, and City Staff with a September or October target date. It is anticipated that, upon completion, the restored tower will be highlighted by PPG in trade magazines and their annual review(s).

RECOMMENDED ACTION: Approval to proceed with the refurbishment of the Novi Road Water Tower, including approval of a contract with Protective Coatings Epoxy Systems for painting and other work in the amount of \$64,298.00, a letter agreement with T-Mobile Central, LLC, for temporary removal and replacement of its wireless antennas in the amount of \$62,895.00, and a \$25,000 contingency fund, with final approval as to the form of such agreements by the City Manager and City Attorney.



Toll Free: (877) 373-0093
PropertyManagement@T-Mobile.com

August 26, 2020

VIA Email

City of Novi
Attention: Mr. Jeffrey A. Muck
45175 Ten Mile Road
Novi, MI 48375

LETTER AGREEMENT

Re: Standard Lease Agreement dated December 20, 2002 (“Lease”) by and between City of Novi as successor on interest to Raven Investments, LLC (“Lessor”) and T-Mobile Central LLC as successor in interest to Omnipoint Holdings, Inc. (“T-Mobile”)

T-Mobile Site No: DE01091A

Site Address: 25460 Novi Road, Novi, MI (“Property”)

Dear Lessor:

This letter shall confirm that the Lessor is the owner of the above-referenced Property and has contacted T-Mobile to advise that it plans to perform work on the water tank located at the above-referenced Property (the “Work”). In order to accomplish the Work, Lessor has indicated that it will be necessary for T-Mobile to temporarily remove its equipment.

T-Mobile is willing to accommodate Lessor’s request and temporarily remove our equipment, provided that Lessor reimburses T-Mobile for all costs incurred in connection therewith. T-Mobile has engaged a General Contractor to provide quotes for the Scope of Work (SOW) required for T-Mobile to accommodate the Work. The SOW was broken down into two phases; (1) the removal of our equipment and deployment of a Cellular on Wheels (COW) (“Phase One”) will cost \$29,370.00 (the “Phase Once Costs”); and (2) the reinstallation of our equipment and decommissioning of the COW (“Phase Two”) will cost \$33,525.00 (the “Phase Two Costs”). See attached proposals for further details. **Lessor agrees to be responsible for up to a 10% increase in any Phase Once Costs and any Phase Two Costs.**

Lessor agrees to reimburse T-Mobile for the Phase One Costs in the amount of \$29,370.00 via a lump sum payment made payable to T-Mobile and mailed to T-Mobile, Attn: Lease Compliance, 12920 SE 38th Street, Bellevue, WA 98006 The reimbursement shall be paid within thirty (30) days of the completion of Phase One. If Lessor fails to make the payment within said thirty (30) day period, T-Mobile will automatically and without the need for further notice, abate the rent until such time as the remaining balance is fully recouped.



Attn: Lease Compliance, 12920 SE 38th Street, Bellevue, WA 98006
www.t-mobile.com

Lessor agrees to reimburse T-Mobile for the Phase Two Costs in the amount of \$33,525.00 via a lump sum payment made payable to T-Mobile and mailed to T-Mobile, Attn: Lease Compliance, 12920 SE 38th Street, Bellevue, WA 98006 The reimbursement shall be paid within thirty (30) days of the completion of Phase Two. If Lessor fails to make the payment within said thirty (30) day period, T-Mobile will automatically and without the need for further notice, abate the rent until such time as the remaining balance is fully recouped.

Kindly sign below in the space provided to indicate Lessor's acceptance of this Letter Agreement. Once Lessor has signed, please forward this Letter Agreement to Tina.Whelan@T-Mobile.com.

Should you have any questions, please do not hesitate to contact the Tina Whelan by phone at (425)383-9588.

Nothing contained herein shall affect or be construed as waiving any of T-Mobile's rights under the Lease, at law, in equity, or otherwise. All such rights are expressly reserved.

Sincerely,

Tina Whelan

Tina Whelan
Sr. Specialist, Technology Property Management

AGREED, ACKNOWLEDGED AND ACCEPTED

LESSOR: City of Novi

By: _____

Name: _____

Title: _____

Date: _____

LESSOR: T-Mobile Central LLC

By: _____

Name: _____

Title: _____

Date: _____



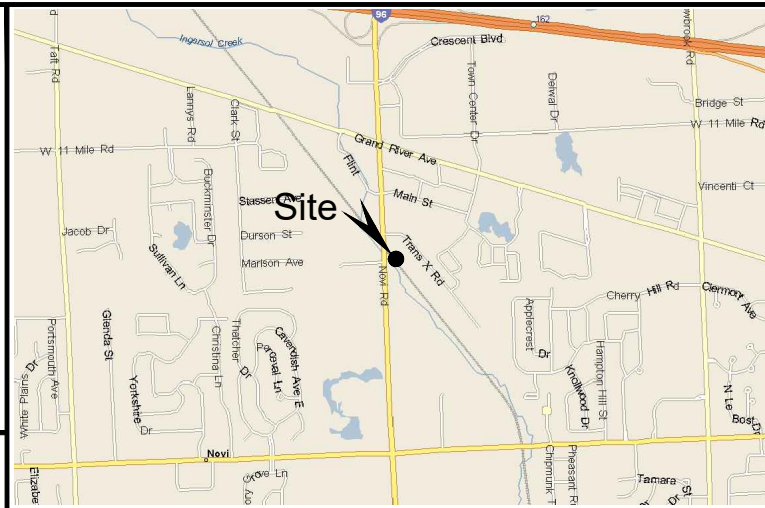


2020 ANCHOR CONSTRUCTION DRAWINGS

SITE NAME
RAINBOW COATINGS

SITE NUMBER
DE01091A
SITE ADDRESS
**25455 TRANS-X ROAD
NOVI, MICHIGAN 48375**

DRIVING DIRECTIONS:
FROM I-96, TAKE EXIT 162 TO NOVI ROAD. PROCEED SOUTH ON NOVI ROAD ±0.8 MILES TO TRANS-X ROAD. TURN LEFT (EAST) AND PROCEED ±500 FEET TO EXISTING WATER TANK SITE.



VICINITY MAP
NOT TO SCALE



SITE TYPE:
UPGRADE OF EQUIPMENT AT AN EXISTING UNMANNED TELECOMMUNICATION SITE.

GEOGRAPHIC INFORMATION:
(LATITUDE & LONGITUDE BASED ON NAD1983)
LATITUDE: 42.47549362°
LONGITUDE: -83.4744289°
T-MOBILE RAD CENTER HEIGHT: 107' AGL

SQUARE FOOTAGE:
T-MOBILE LEASE AREA: 220 SQ. FT.

LANDLORD:
RAVEN INVESTMENTS ROC

APPLICANT
T-MOBILE CENTRAL, LLC
28505 SCHOOLCRAFT RD, BLDG#6
LIVONIA, MICHIGAN 48150
Phone: 734.367.7200

ENGINEER
LANDTECH PROFESSIONAL SURVEYING
AND ENGINEERING
P.O. BOX 193
1275 MCGREGOR WAY
GRAWN, MI 49637
PHONE: (231) 943-0050

OCCUPANT LOAD:
UNOCCUPIED

PARCEL NUMBER (TAX I.D.):
22-23-151-029



28505 SCHOOLCRAFT RD, BLDG#6
LIVONIA, MICHIGAN 48150
Phone: 734.367.7200
Fax: 734.367.7242
CONTACT: KEN KALOUSEK
(734) 444-0181

LANDTECH PROJECT NUMBER: 20396003

REV.	DATE	DESCRIPTION	BY
A	07/23/20	PRELIM CDs	TLR
B	08/07/20	REV'D RFDS	TLR

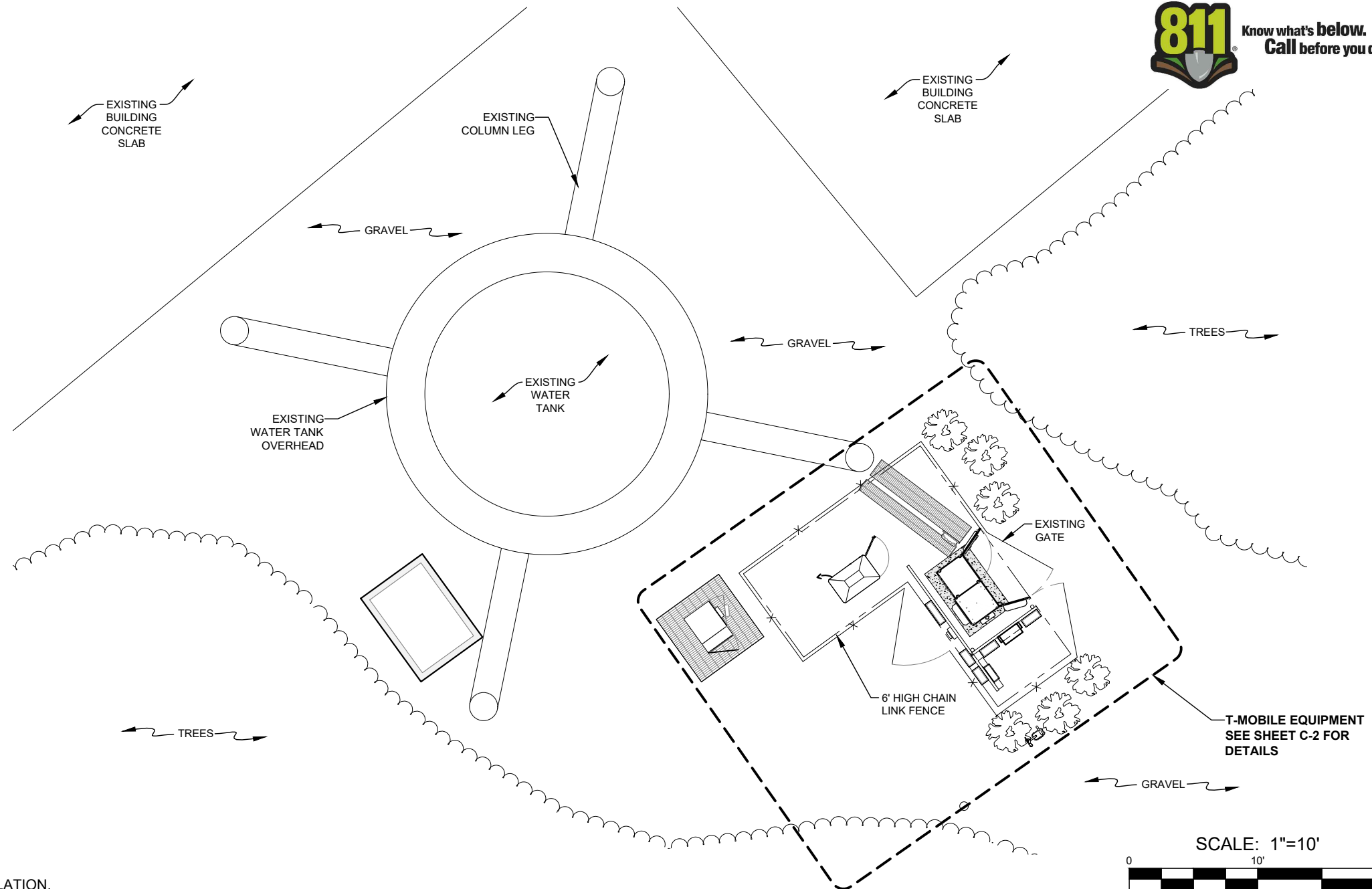
- REMOVING:**
- (3) DBXNH-6565B-A2M ANTENNA(s)
 - (6) TMBXX-6517-A2M ANTENNA(s)
 - (3) FRIG RADIO(s)
 - (3) FHFB RADIO(s)
 - (3) FRLB RADIO(s)
 - (3) ASU9338TYP01 COVP
 - (6) ETM19V2S12UB (STYLE 4) AMPLIFIER
 - (3) 1-1/4"Ø HYBRID CABLE(s)
 - (6) 1-1/4"Ø COAX CABLE(s)

- INSTALLING:**
- (3) FFVV-65C-R3-V1 ANTENNA(s)
 - (3) AEHC (MASSIVE MIMO) ANTENNA(s)
 - (3) AHLOA RADIO(s)
 - (3) AHFIG RADIO(s)
 - (2) TOWER JUNCTION BOX COVP
 - (2) 1-1/2"Ø HYBRID CABLE(s)

ATTENTION GC:
THESE DRAWINGS ARE PREPARED BASED ON RFDS
DATED: 07/31/20

GENERAL CONTRACTOR TO CHECK WITH CONSTRUCTION
TO VERIFY THAT THE RFDS IS CORRECT.

SCOPE OF WORK (SECTOR) 1



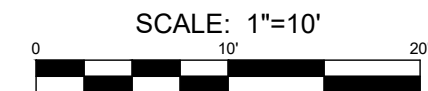
LOW VOLTAGE DC POWER
REQUIRED (-48 VOLTS)

CHECK BREAKER SIZE. 200 AMP
BREAKER REQUIRED FOR SSC

THE T-MOBILE EQUIPMENT IS LESS
THAN 400A ELECTRICAL SERVICE.



NOTE: CM TO VERIFY EQUIPMENT LAYOUT PRIOR TO INSTALLATION.



SITE PLAN 1" = 10'

2

2020 ANCHOR CONSTRUCTION DRAWINGS

NOTE: THESE DRAWINGS ARE TO SCALE
WHEN PLOTTED ON 11"x17" SHEETS. REFER
TO GRAPHIC SCALES ON REPRODUCTIONS.



SITE #: DE01091A
SITE NAME:
RAINBOW COATINGS
SITE ADDRESS:
25455 TRANS-X ROAD
NOVI, MICHIGAN 48375

Sheet Title:

SITE PLAN

Sheet Number:

C-1

REV.	DATE	DESCRIPTION	BY
A	07/23/20	PRELIM CDs	TLR
B	08/07/20	REV'D RFDS	TLR

**2020 ANCHOR
CONSTRUCTION
DRAWINGS**

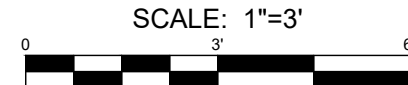
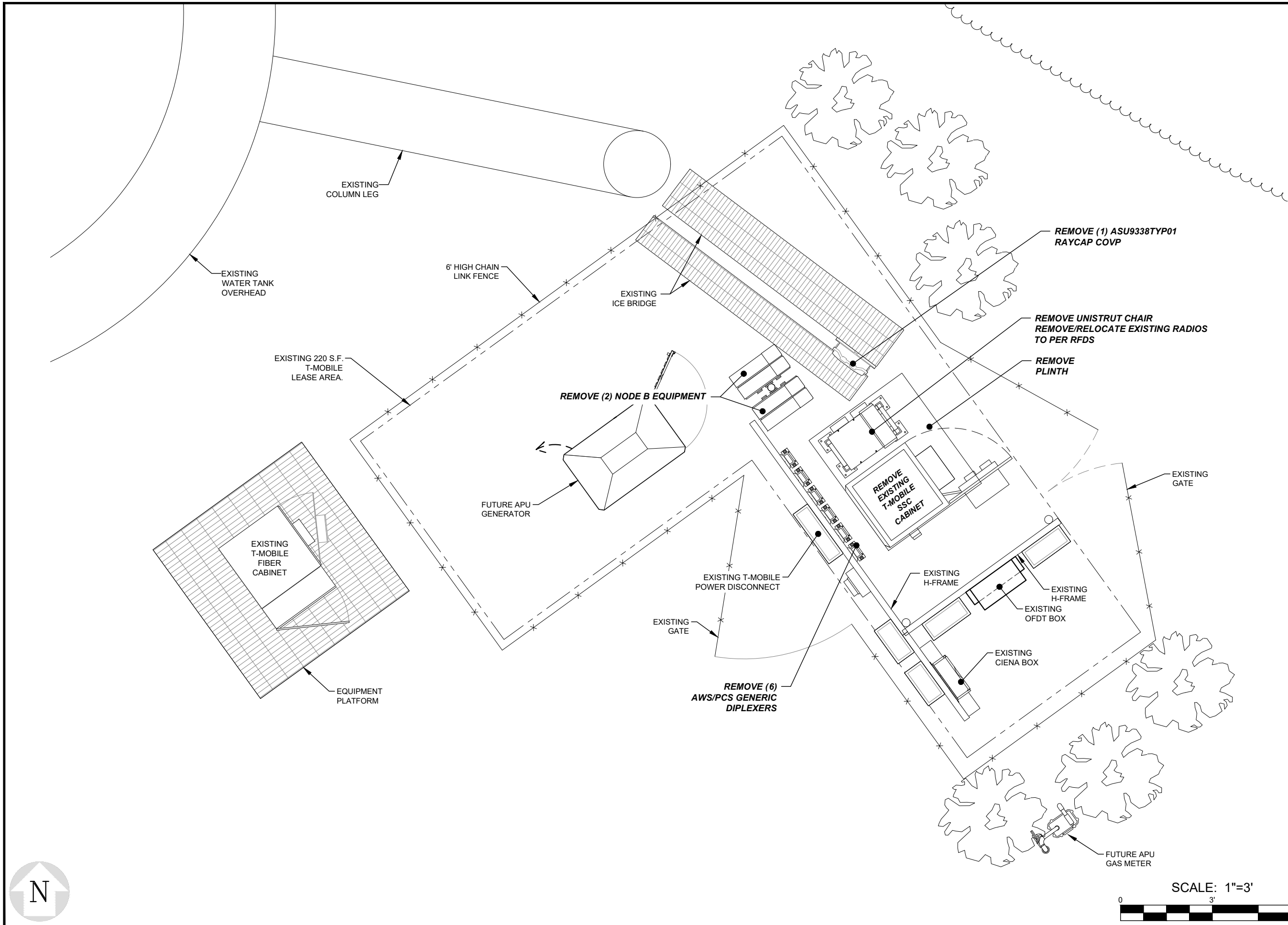
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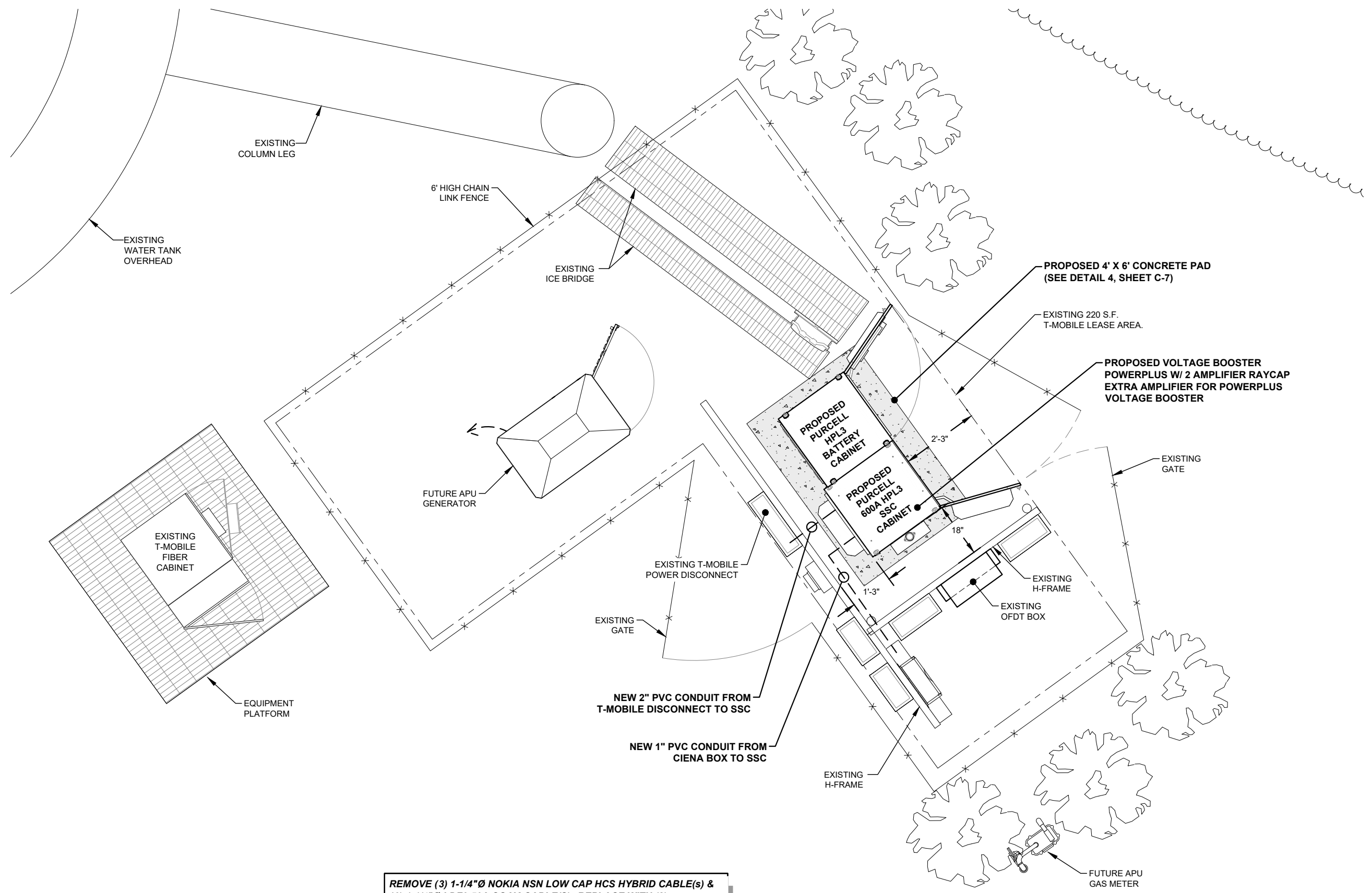


SITE #: DE01091A
SITE NAME:
RAINBOW COATINGS
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25455 TRANS-X ROAD
NOVI, MICHIGAN 48375

Sheet Title:
**EXISTING EQUIPMENT
PLAN**

Sheet Number:
C-2





REMOVE (3) 1-1/4"Ø NOKIA NSN LOW CAP HCS HYBRID CABLE(S) & (6) 1-1/4"Ø LDF6-50A COAX CABLE(S), REPLACE WITH (2) PROPOSED 1-1/2"Ø NOKIA HCS 2.0 TRUNK CABLE HYBRID CABLE(S)

LANDTECH PROJECT NUMBER: 20396003

REV.	DATE	DESCRIPTION	BY
A	07/23/20	PRELIM CDs	TLR
B	08/07/20	REV'D RFDS	TLR

2020 ANCHOR CONSTRUCTION DRAWINGS

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SITE #: DE01091A
 SITE NAME:
 RAINBOW COATINGS
 SITE ADDRESS:
 25455 TRANS-X ROAD
 NOVI, MICHIGAN 48375

Sheet Title:
PROPOSED EQUIPMENT PLAN

Sheet Number:
C-2.1



GENERAL CONTRACTOR TO CHECK WITH T-MOBILE BEFORE CONSTRUCTION STARTS TO VERIFY THAT THE RFDS IS CORRECT.

ANTENNA SCHEDULE						
SECTOR	ALPHA		BETA		GAMMA	
ANTENNA POSITION	A-1	A-2	B-1	B-2	C-1	C-2
AZIMUTH	41°	41°	147°	147°	249°	249°
RAD CENTER (AGL)	107'	107'	107'	107'	107'	107'
MODEL	FFVV-65C-R3-V1	AEHC (MASSIVE MIMO)	FFVV-65C-R3-V1	AEHC (MASSIVE MIMO)	FFVV-65C-R3-V1	AEHC (MASSIVE MIMO)

T-Mobile
 28505 SCHOOLCRAFT RD, BLDG#6
 LIVONIA, MICHIGAN 48150
 Phone: 734.367.7200
 Fax: 734.367.7242
 CONTACT: KEN KALOUSEK
 (734) 444-0181

LANDTECH PROJECT NUMBER: 20396003

REV.	DATE	DESCRIPTION	BY
A	07/23/20	PRELIM CDs	TLR
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2020 ANCHOR CONSTRUCTION DRAWINGS

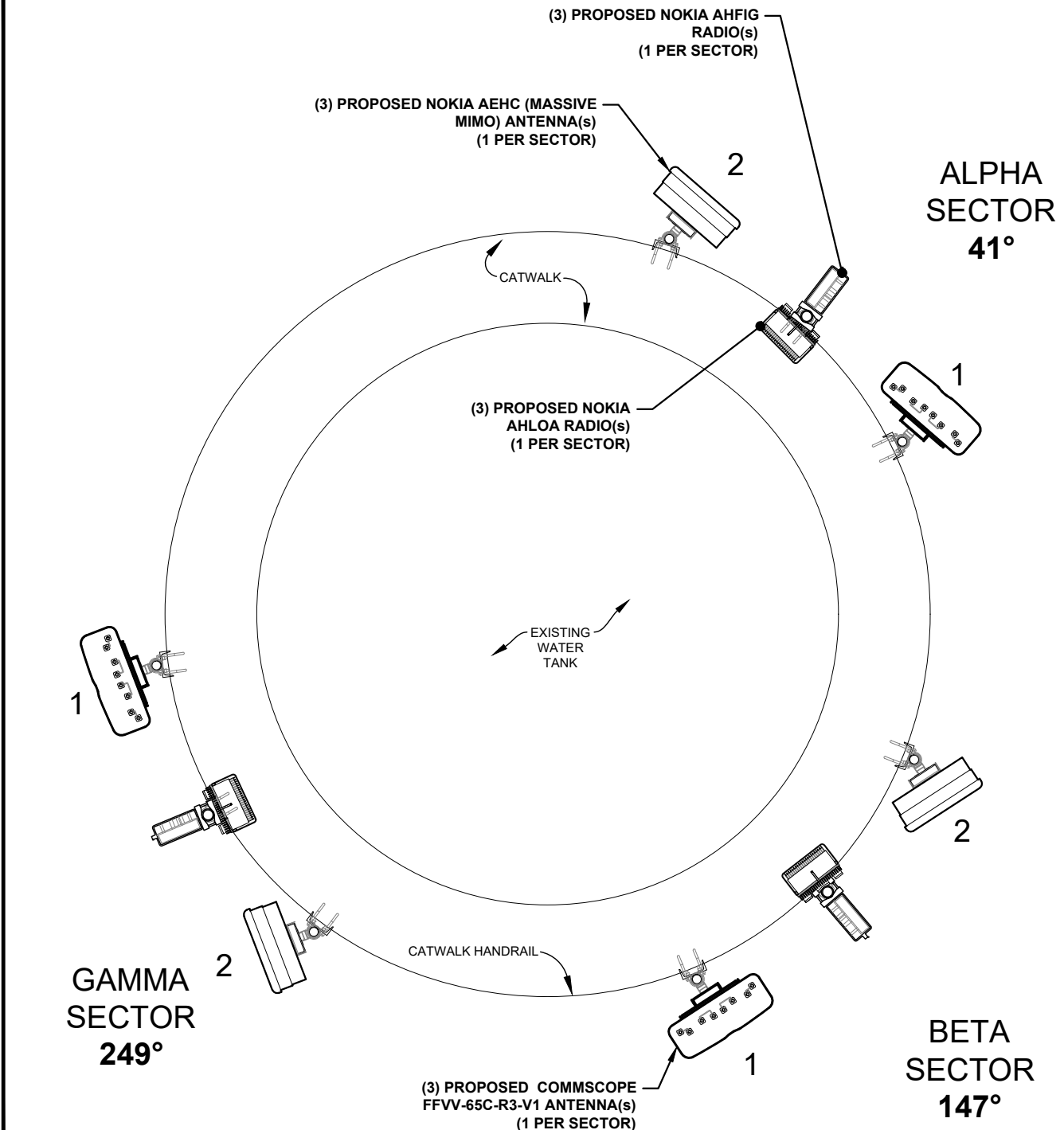
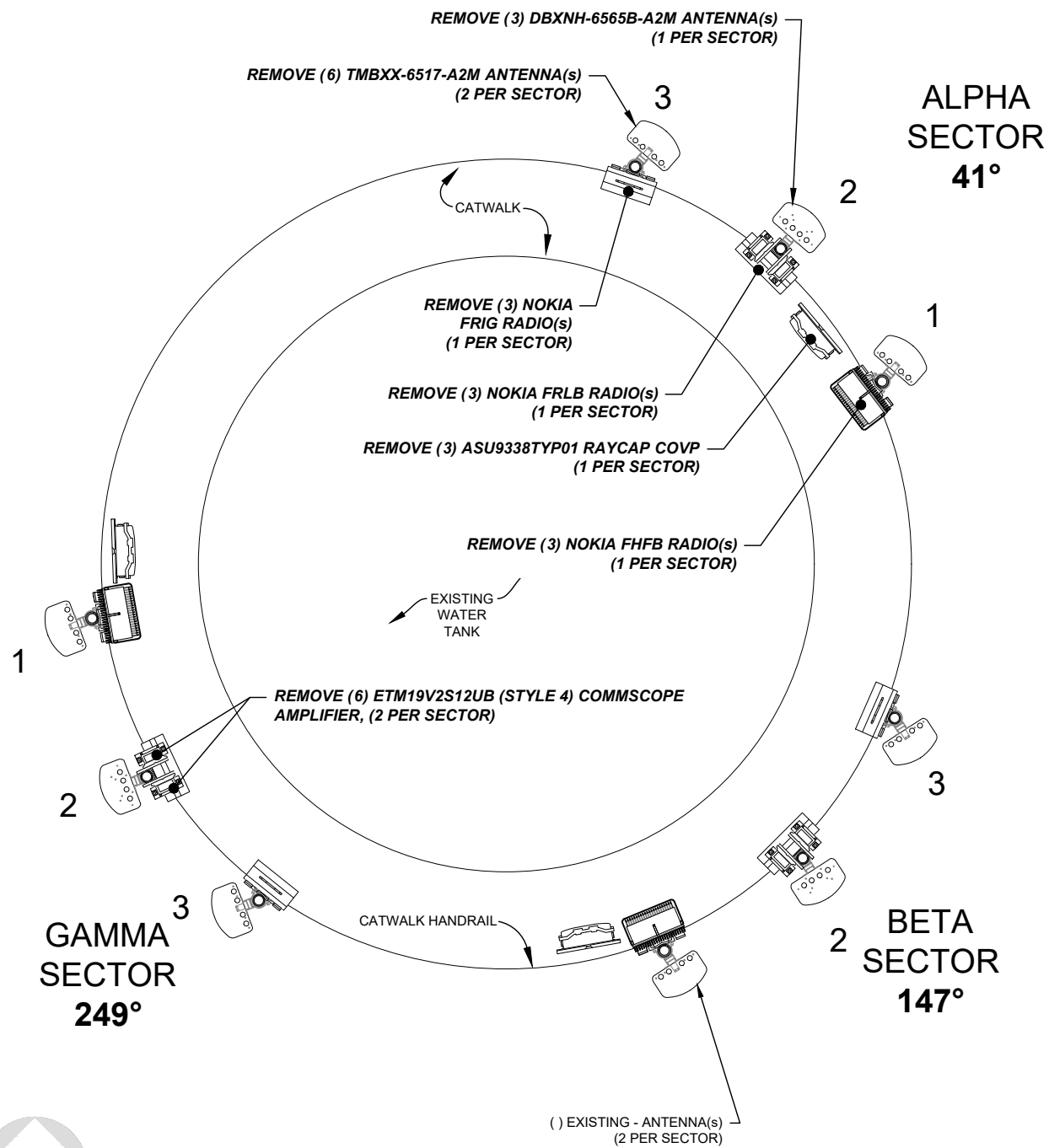
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SITE #: DE01091A
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 SITE ADDRESS: 25455 TRANS-X ROAD
 NOVI, MICHIGAN 48375

Sheet Title: ANTENNA LAYOUT

Sheet Number: C-3



EXISTING ANTENNA LAYOUT N.T.S.

PROPOSED ANTENNA LAYOUT N.T.S.

LANDTECH PROJECT NUMBER: 20396003

REV.	DATE	DESCRIPTION	BY
A	07/23/20	PRELIM CDs	TLR
B	08/07/20	REV'D RFDS	TLR

**2020 ANCHOR
 CONSTRUCTION
 DRAWINGS**

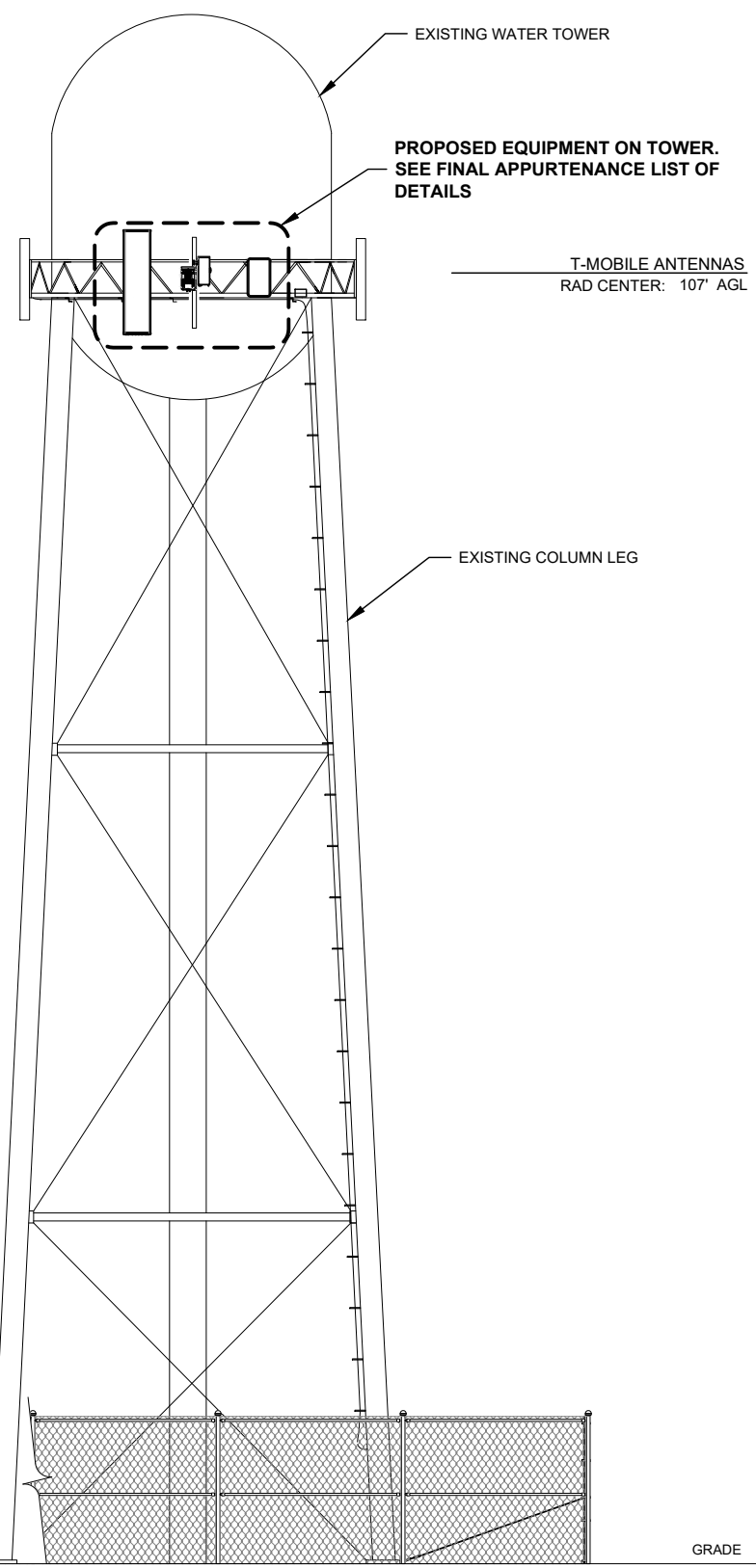
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SITE #: DE01091A
 SITE NAME:
 RAINBOW COATINGS
 SITE ADDRESS:
 25455 TRANS-X ROAD
 NOVI, MICHIGAN 48375

Sheet Title:
ELEVATION VIEW

Sheet Number:
C-4



APPURTENANCE LIST (SECTOR EQUIPMENT)

TO REMAIN

NO SECTOR EQUIPMENT REMAIN

TO BE REMOVED

- (3) COMMSCOPE DBXNH-6565B-A2M ANTENNA(s)
[72.7"l x 11.9"w x 7.1"d 46.3lb(s)]
- (6) ANDREW TMBXX-6517-A2M ANTENNA(s)
[84.1"l x 6.5"w x 12"d 43lb(s)]
- (3) NOKIA FRIG RADIO(s) (@SECTOR)
[18.1"l x 15.2"w x 6"d 57.32lb(s)]
- (3) NOKIA FHFB RADIO(s) (@SECTOR)
[34.3"l x 34.3"w x 7.8"d 52.9lb(s)]
- (3) NOKIA FRLB RADIO(s) (@SECTOR)
[15.75"l x 15.75"w x 5.2"d 52.5lb(s)]
- (3) ASU9338TYP01 RAYCAP COVP (@SECTOR)
[20.38"l x 18.86"w x 5.83"d 19lb(s)]
- (6) ETM19V2S12UB (STYLE 4) COMMSCOPE AMPLIFIER (@SECTOR)
[10"l x 8.6"w x 2.3"d 11.2lb(s)]
- (3) 1-1/4"Ø [1.24"OD] NOKIA NSN LOW CAP HCS HYBRID CABLE(s)
- (6) 1-1/4"Ø [1.55"OD] ANDREW LDF6-50A COAX CABLE(s)

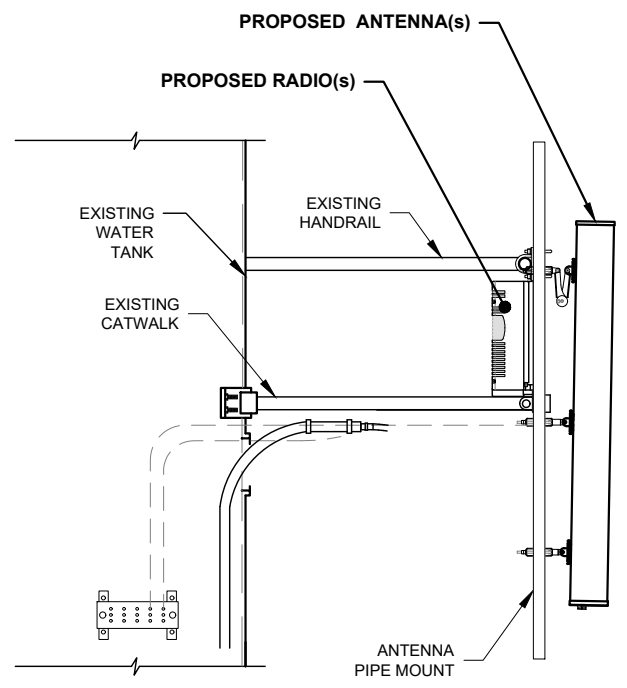
PROPOSED

- (3) COMMSCOPE FFVV-65C-R3-V1 ANTENNA(s)
[95.9"l x 25.2"w x 9.3"d 124.6lb(s)]
- (3) NOKIA AEHC (MASSIVE MIMO) ANTENNA(s)
[35.4"l x 21"w x 8.3"d 99.2lb(s)]
- (3) NOKIA AHLOA RADIO(s) (@SECTOR)
[22.1"l x 12.2"w x 7.5"d 83.9lb(s)]
- (3) NOKIA AHFIG RADIO(s) (@SECTOR)
[27.4"l x 12.1"w x 5.2"d 79.3lb(s)]
- (2) 1-1/2"Ø [1.55OD] NOKIA HCS 2.0 TRUNK CABLE HYBRID CABLE(s)

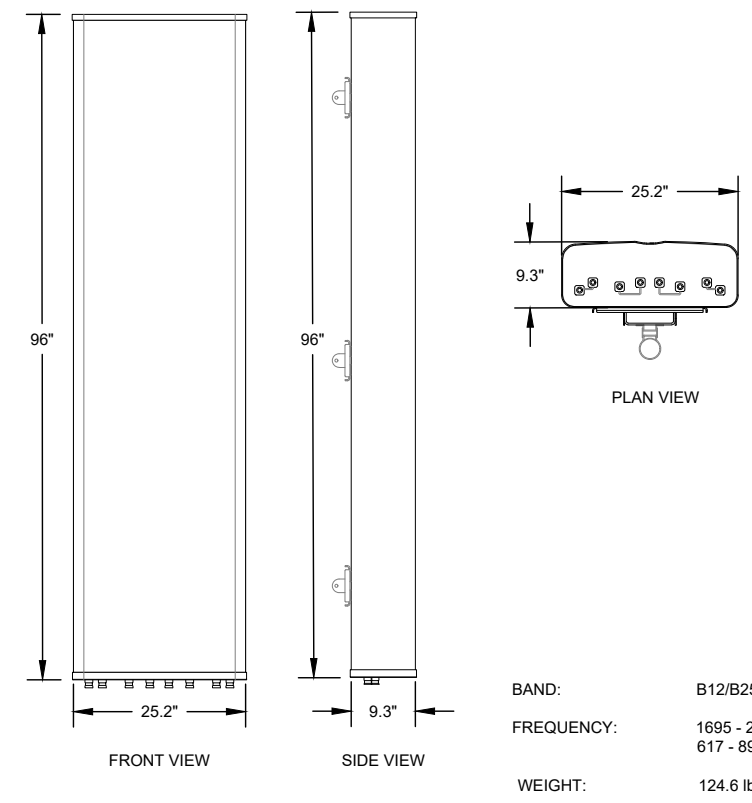
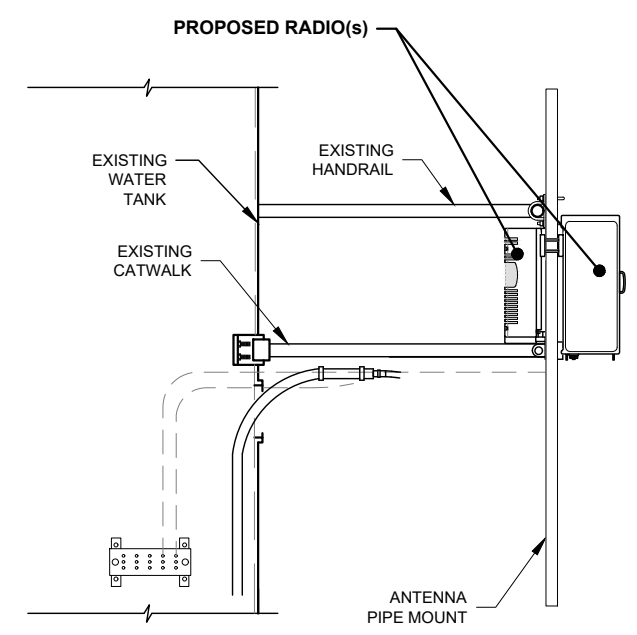
SECTORIZED COLOR IDENTIFICATION	
SECTOR A	RED
SECTOR B	GREEN
SECTOR C	BLUE
SECTOR D	YELLOW
SECTOR E	WHITE
SECTOR F	PURPLE
LMU	BROWN
FIBER ID	GRAY
UNUSED COAX	PINK
MICROWAVE	ORANGE
PWE T-1's	ID w/LABEL MAKER

**GENERAL CONTRACTOR TO CHECK WITH
 T-MOBILE BEFORE CONSTRUCTION STARTS
 TO VERIFY THAT THE RFDS IS CORRECT.**

NOTE: ALL ANTENNA CENTERLINES MUST BE POSITIONED WITHIN ±6 INCHES OF THE HORIZONTAL CENTERLINE OF THE STEEL ANTENNA PLATFORM AND/OR SECTOR FRAME.



NOTE: ALL ANTENNA CENTERLINES MUST BE POSITIONED WITHIN ±6 INCHES OF THE HORIZONTAL CENTERLINE OF THE STEEL ANTENNA PLATFORM AND/OR SECTOR FRAME.



T-Mobile
 28505 SCHOOLCRAFT RD, BLDG#6
 LIVONIA, MICHIGAN 48150
 Phone: 734.367.7200
 Fax: 734.367.7242
 CONTACT: KEN KALOUSEK
 (734) 444-0181

LANDTECH PROJECT NUMBER: 20396003

REV.	DATE	DESCRIPTION	BY
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B	08/07/20	REV'D RFDS	TLR

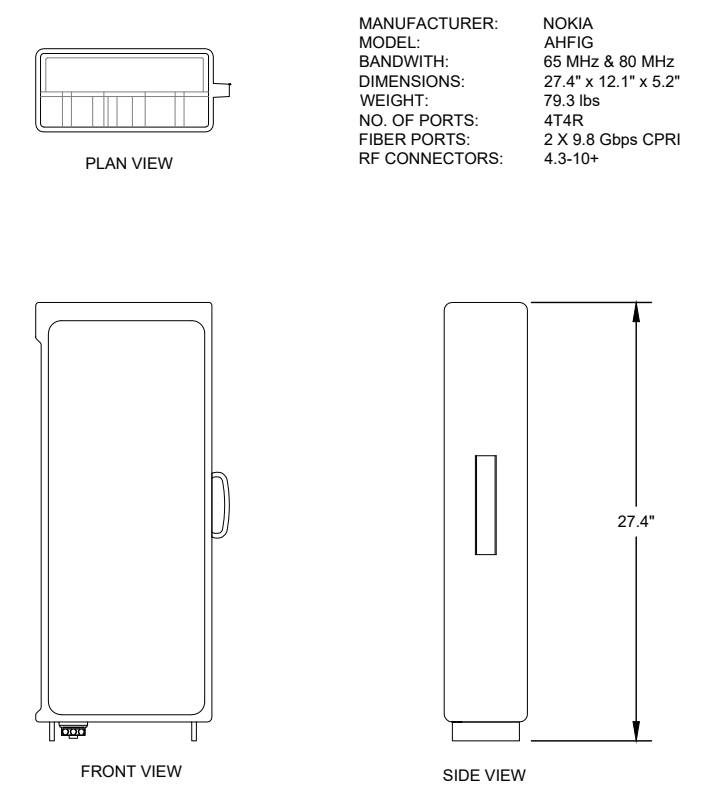
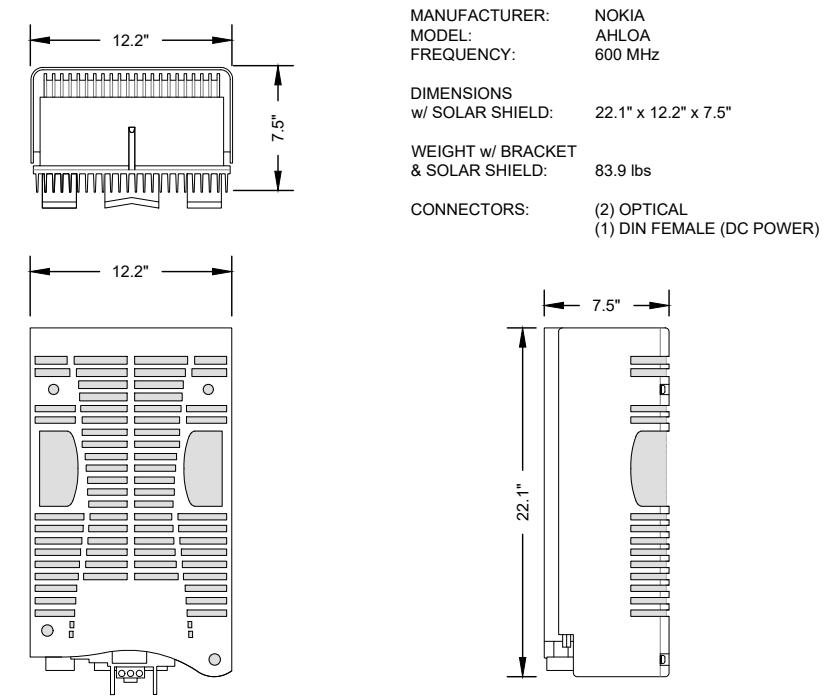
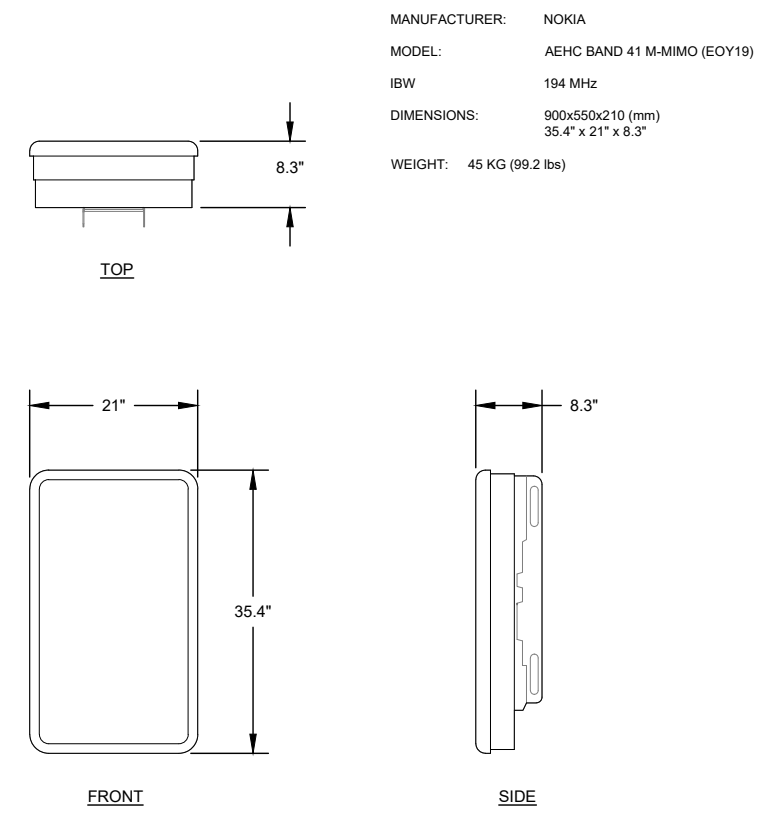
2020 ANCHOR CONSTRUCTION DRAWINGS

NOTE: THESE DRAWINGS ARE TO SCALE WHEN PLOTTED ON 11"x17" SHEETS. REFER TO GRAPHIC SCALES ON REPRODUCTIONS.

ANTENNA MOUNTING DETAILS N.T.S. **1**

RRU MOUNTING DETAILS N.T.S. **2**

COMMSCOPE FFVV-65C-R3-V1 ANTENNA N.T.S. **3**



NOKIA AEHC MASS. MIMO ANTENNA N.T.S. **4**

AHLOA RRU DETAIL N.T.S. **5**

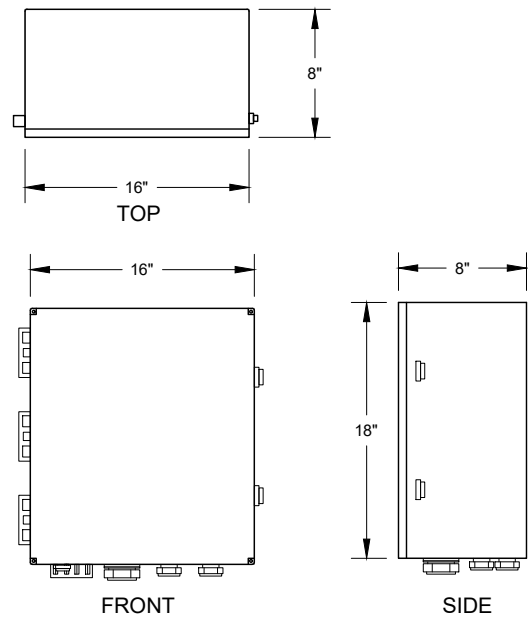
AHFIG RRU DETAIL N.T.S. **6**



SITE #: DE01091A
 SITE NAME:
 RAINBOW COATINGS
 SITE ADDRESS:
 25455 TRANS-X ROAD
 NOVI, MICHIGAN 48375

Sheet Title:
EQUIPMENT DETAILS

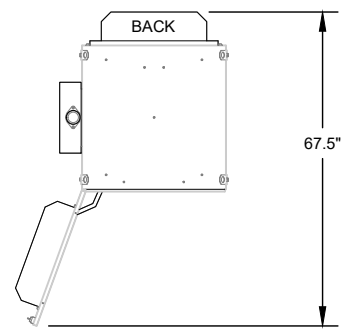
Sheet Number:
C-6



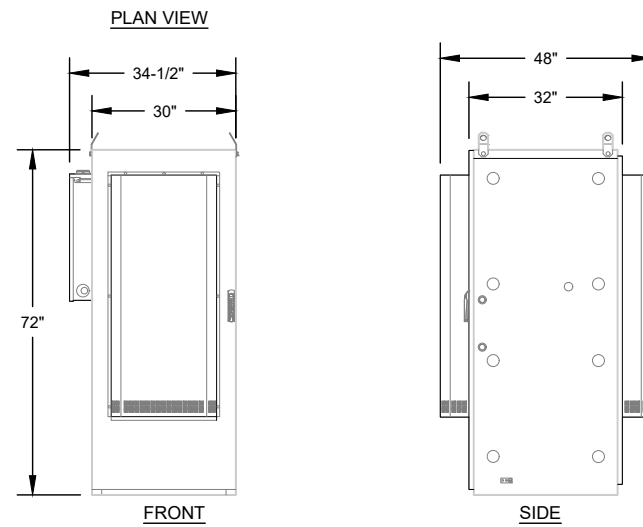
MANUFACTURER: COMMSCOPE
 DIMENSIONS: 14"x16"x8"
 WEIGHT: 23.5 LB
 FIBER PATCH PANEL ENV. RATING: 24 LC PAIRS IP67

MANUFACTURER: RAYCAP
 DIMENSIONS: 14"x16"x8"
 WEIGHT: 21.9 LB
 FIBER PATCH PANEL ENV. RATING: 24 LC PAIRS IP66

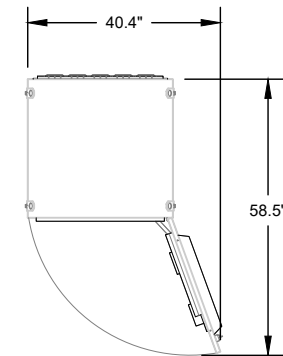
TOWER JUNCTION BOX DETAIL N.T.S. **1**



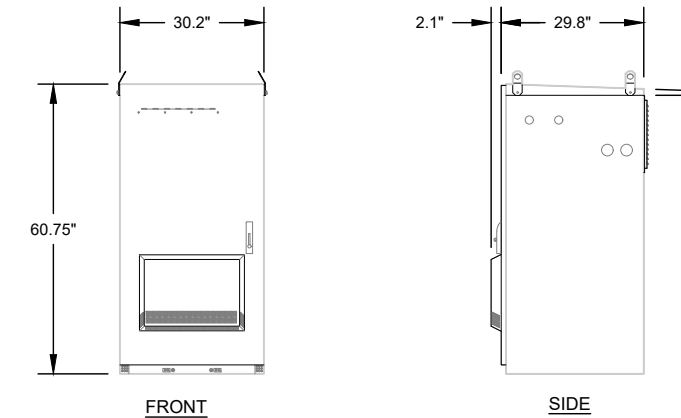
PROPERTY	VALUE	PROPERTY
HEIGHT	72 in (876 mm)	BASIC CABINET: ENCLOSURE, DC POWER PLANT W/OUT LIFTING BRACKETS
WIDTH	30 in 762 mm	BASIC CABINET: ENCLOSURE, DC POWER PLANT
WIDTH W/AC LOAD CENTER	34-1/2 in 835 mm	BASIC CABINET: ENCLOSURE, DC POWER PLANT W/ AC SIDE MOUNTED LOAD CENTER
DEPTH	32 in 813 mm	BASIC CABINET: ENCLOSURE, DC POWER PLANT
DEPTH WITH SHROUDS	48 in 1219 mm	BASIC CABINET: ENCLOSURE, W/ FRONT AND REAR DAC SHROUDS
EST. WEIGHT	850 lbs	BASIC CABINET WEIGHT WITH TOTAL OF 7 SUBBRACKS INCLUDED



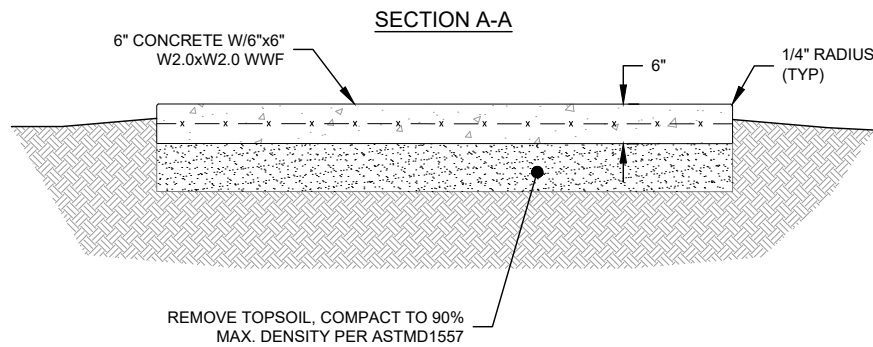
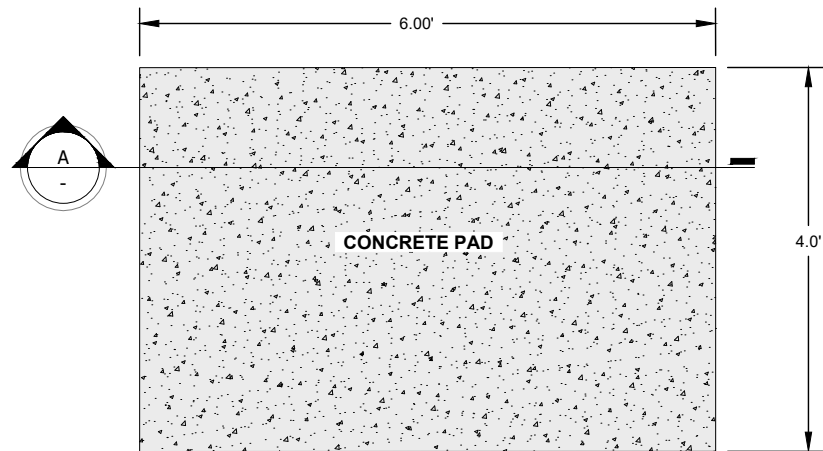
PURCELL 600A HPL3 SSC N.T.S. **2**



PROPERTY	VALUE
HEIGHT	60.75 in 1543.00 mm
WIDTH	30.2 in 768.17 mm
DEPTH W/ DAC	31.9 in 810.37 mm
DEPTH	29.8 in 757.54 mm
DOOR OPENING WIDTH	26.5 in 673.12 mm
DOOR OPENING HEIGHT	55.6 in 1411.93 mm
EST. WEIGHTS	540 lbs (EMPTY) 2700 lbs (4 BATTERY STRINGS)



PURCELL LARGE BATTERY CABINET N.T.S. **3**



CONCRETE PAD DETAIL N.T.S. **4**

NOT USED N.T.S. **5**

NOT USED N.T.S. **6**

T Mobile
 28505 SCHOOLCRAFT RD, BLDG#6
 LIVONIA, MICHIGAN 48150
 Phone: 734.367.7200
 Fax: 734.367.7242
 CONTACT: KEN KALOUSEK
 (734) 444-0181

LANDTECH PROJECT NUMBER: 20396003

REV.	DATE	DESCRIPTION	BY
A	07/23/20	PRELIM CDs	TLR
B	08/07/20	REV'D RFDS	TLR

2020 ANCHOR CONSTRUCTION DRAWINGS

NOTE: THESE DRAWINGS ARE TO SCALE WHEN PLOTTED ON 11"x17" SHEETS. REFER TO GRAPHIC SCALES ON REPRODUCTIONS.



SITE #: DE01091A
 SITE NAME:
 RAINBOW COATINGS
 SITE ADDRESS:
 25455 TRANS-X ROAD
 NOVI, MICHIGAN 48375

Sheet Title:
EQUIPMENT DETAILS

Sheet Number:
C-7

INDEPENDENT CONTRACTOR SERVICES CONTRACT

This Contract shall be effective as of the date of the last signature and is between the City of Novi, whose address is 45175 Ten Mile Road, Novi, MI 48375, ("City"), and Protective Coatings Epoxy Systems, whose address is 971 Arlene Court Fowlerville, MI, 48836 ("Contractor").

Services. This Contract is for the cleaning, restoration, sandblasting, and painting of the City's water tower located at 25460 Novi Road.

Contract Documents. The Scope of Work, Payment Schedule, Insurance Requirements, and other attachments to this Contract are "Contract Documents", which are considered part of this Contract to the extent applicable and not in conflict with the following terms and conditions.

Work. For and in consideration of payment by the City as provided under the Payment Section of this Contract, Contractor shall perform the work described in the Service Specifications and other Contract Documents in a competent, efficient, timely, good and workmanlike manner, subject to and in compliance with the terms and conditions of this Contract.

Contract Term and Termination. This Contract shall be in effect until terminated. This Contract may be terminated for cause by the City as provided under Inspections, Notices and Remedies Regarding Work, and may be terminated by either party without cause by at least 30 days written notice to the other party that identifies the date the termination will be effective. The City shall not be responsible to make any payments for services performed by Contractor after the effective date of a termination and shall only be responsible to pay for services that have been completed and are eligible for payment prior to the effective date of the termination. Termination shall not relieve Contractor of the obligation to provide the City with all documents and materials related or relevant to the services as provided in the Service Specifications through the effective date of termination.

Contract Price and Payment. For and in consideration of the timely and satisfactory completion of work, the City shall pay Contractor \$64,298.00. Such amount shall be payable in two (2) installments of \$32,149.00. The first installment shall be upon mobilization of equipment and the second installment shall be upon completion, after the City receives all required documentation and the bill or invoice for such work from the Contractor.

Insurance. Contractor shall have no right to or expectation of coverage under any liability, workers' compensation, or other insurance policies of the City. This Contract is conditioned on the Insurance Requirements in the Contract Documents being satisfied and confirmed by Certificate(s) of Insurance delivered to the City, with said coverages to be maintained for the life of this Contract and the City entitled to prior written notice of cancellation, changes or non-renewal. All Liability Insurance shall name the City and its officials, employees, and agents as primary, noncontributory additional insureds. Contractor shall provide the City with a copy of each insurance policy within seven (7) days of a written request.

Time of Work. Contractor shall be obligated to perform the work during all terms of this Contract at the times and according to any schedule specified in the Contract Documents. These requirements are of the essence of this Contract and failure to meet them shall permit City to exercise its rights and remedies for default as provided in this Contract, whether or not work has been commenced.

Liability. Contractor shall be liable for any injury or damage occurring on account of the performance of its work under this Contract. Consistent with this liability, the Contractor agrees to indemnify, defend,

pay on behalf of, and hold harmless the City, its agents and others working on the City's behalf against any and all claims, demands, suits, losses and settlements, including actual attorney fees incurred and all costs connected therewith, for any damages which may be asserted, claimed or recovered against the City by reason of personal injury and/or property damage which arise out of or are in any way connected or associated with this Contract and are attributable to the fault of Contractor or its agents or subcontractors, including claims under the worker's compensation laws of the State of Michigan.

Inspections, Notices and Remedies Regarding Work. During the performance of the work by Contractor, City shall have the right to inspect the work and its progress to assure that it complies with this Contract. If such inspections reveal a defect in the work performed or other default in this Contract, City shall provide Contractor with written notice to correct the defect or default within a specified number of days of the notice. Upon receiving such a notice, Contractor shall correct the defects or defaults within the time specified. Upon Contractor's failure to do so, the City may: (1) withhold payments otherwise due to Contractor until the default is corrected, (2) perform or secure performance of the work through whatever method it deems appropriate, with the cost in doing so a valid claim and charge against Contractor and any payments otherwise due to Contractor, and (3) terminate this Contract by written notice, or without terminating this Contract, preserve the claims of defects or defaults and City's entitlement to damages from them by written notice to Contractor.

Independent Contractor. Contractor is and shall perform under this Contract as an independent contractor with complete control over its employees, if any, and operations, and the means of providing services consistent and in compliance with the Service Specifications. No employee, agent or representative of Contractor shall represent, act or be considered as an agent, representative or employee of the City and nothing in this Contract shall create any contractual relationship between the City and any subcontractor of the Contractor.

Except as otherwise provided in the Service Specifications, Contractor shall supply all equipment, tools, materials, and supplies necessary to performance of the work.

The City will not withhold from or pay for any income, FICA, disability, unemployment, or other payroll or employment taxes with respect to payments to Contractor and will issue an IRS Form 1099 to Contractor for those payments. Contractor shall be solely responsible for payment of any employees or subcontractors.

Contractor and any Contractor employees or subcontractors shall not be eligible for or entitled to receive any health, life, disability or other insurance, pension or retirement, reimbursement, or other benefit provided or made available by the City to City employees.

Record Checks. Contractor and Contractor employees, if any, shall not perform work under this Contract until they have been approved to do so by the Novi Police Department after a criminal history check, with Contractor responsible for timely providing employee names and information in a manner that avoids delays in its ability to commence and perform the work.

Non-Discrimination. Contractor shall not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, disability, or other classification that is protected from discrimination by law.

Compliance with and Governing Laws. This Contract and all of Contractor's work shall be subject to all applicable state, federal and local laws, rules or regulations, including without limitation, those which

apply because the City is a public governmental agency or body. Contractor represents that it is in compliance with all such laws and eligible and qualified to enter into this Contract. This Contract shall be governed by the laws of the State of Michigan.

Assignment, Subcontracts and Binding Nature of Contract. Contractor shall not assign or subcontract the performance of this Contract or any part thereof without the written consent of the City. This Contract shall be binding on the parties, their successors, assigns and legal representatives.

Notices. Written notices under this Contract shall be given to the parties at their addresses contained in this Contract by personal, registered mail, or overnight delivery to the attention of the following persons:

City: City Manager, City Clerk and

Contractor: Mike Moran, Protective Coatings Epoxy Systems

Changes and Waivers. Any changes in the provisions of this Contract must be in writing and signed by the City and Contractor. No waiver of any term or condition of this Contract shall be binding and effective unless in writing and signed by all parties, with any such waiver being limited to that circumstance only and not applicable to subsequent actions or events.

Witnesses and Dates of Signatures

CITY OF NOVI

Date: _____

By:
Its:

CONTRACTOR

Date: _____

By:
Its:

CONTRACT DOCUMENT ATTACHMENTS

- 1. Scope of Work
- 2. Schedule
- 3. Insurance Requirements

Proposal



TO:	Dan Perrault	Project Title:	TANKS
ATTN:		Project Description:	
Company Name:	Protective Coatings Epoxy Systems	P.O. Number:	
City, State Zip Code:	Novi, MI	Term:	50% down/50% completion
Date:			

Description	Quantity
Scope of Work Includes	
PPG to provide all coatings and thinners for reduction and clean up . Lifts and aerial booms provided by PCE	
Storage Silo	
Surface Preparation	
SSPC-SP WJ-4/NACE WJ4 LPWC <5000 PSI with Clor-Rid detergent and contamination remover.	
Blast Abrasive Brush to SSPC-SP7 - NACE 4 BRUSH Blast hard to reach areas.	
Commercial Blast SSPC-SP 6 Tank	

Description

Quantity

Install Epoxy

1. AMERLOCK SEALER

DESCRIPTION

Two-component, penetrating epoxy primer sealer

PRINCIPAL CHARACTERISTICS

Solvent-free

Compatible with damp surfaces

Wicking action penetrates rusted steel and concrete surfaces

Surface tolerant for applications where high degree abrasive blasting is not an option

Excellent tie coat for many existing coatings

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Coating performance is, in general, proportional to the degree of surface preparation

Use of this product provides a viable options for coating projects where abrasive blasting is not possible, but it is not a performance substitute for abrasive blasting in many circumstances

2. Install Amerlock 2

DESCRIPTION

Fast Dry, Surface Tolerant, High Solids Epoxy Coating

PRINCIPAL CHARACTERISTICS

Fast dry

Low VOC

High performance general maintenance coating for new or old steel

Self priming over most existing coatings

Compatible with prepared damp surfaces

Description

Quantity

3. Install PSX 700 finish coat PSX Advantage: PSX 700 is a patented engineered siloxane coating which embodies the properties of both a high performance epoxy and a polyurethane in one coat. This multi-purpose coating offers "breakthrough" weather resistance and corrosion control.
Unique, high-gloss, super durable coating

Can be applied directly over 2-pack epoxy zinc rich primers

Cures at room temperature
Gloss and appearance retention exceeding the best polyurethane
Significantly lower applied costs
Excellent to acids and corrosion.
High solids, low VOC
Resists high humidity and moisture
Applied by brush, roller or spray
Outstanding resistance to chemical splash and spill

Install PPG Logo and City selected Logo

Description	Quantity
Reset existing grade on hill with bobcat	
Grade dirt around tank 15 yards of soil	
10 yard dumpster onsite	
50% down after mobilization of equipment 50% on completion	
Total	\$64,298.00

References

PCE, Inc. is structured so that it is successful in providing the customer with their ultimate expectations. PCE bears no responsibility of prior coating that has pealed and penetrated soil in the prior years if considered contaminated soil.

We are confident that PCE, Inc. is able to provide the best service and quality available in the marketplace. Therefore, we have available for your review, a list of references which we strongly encourage your pursuit to confirm our confidence. Additionally, if you would like to visit any of these facilities we would be more than happy to arrange such at your convenience. All of the procedures and systems listed above are designed to provide high performance with outstanding durability, as well as the aesthetic values needed. We also propose the highest standard of professional craftsmanship at what we believe to be fair and equitable considerations.

Representations

Safety Standards:

All work practices, materials and equipment used will be in full compliance with customer

safety requirements, or PCE, Inc.'s Safety Standards, whichever is greater.

OSHA Compliance:

Description	Quantity
All work practices, materials and equipment used will be in full compliance with applicable	
General Liability & Workmen's Compensation:	
PCE, Inc. personnel are fully covered by Workmen's Compensation Insurance.	
Obstacles	
Should there be equipment, such as conduit it will be painted under this current proposal and subject to change prices on demands of the city requirements	
INSURANCE CERTIFICATES REQUIRED	

Service Environment
C5-I Severe Heavy Industrial

Epoxy, and 2K
 Polysiloxthane
 Urethane
 appx. 15
 years
 Provides
 Barrier
 Protection
 and
 Chemical,
 Abrasion
 and UV
 Resistance



Description

Quantity

If the customer requires proof of insurance certificates for Liability or worker's comp before payment can be made upon completion of the job, please notify PCE before payment is due. Supply the proper name and address required for these certificates so they can be forwarded to you in a timely manner.





Case Study

RheTech, Inc. Storage Tank Coating

OEM

The Customer

RheTech, Inc. is one of the leading producers of filled & reinforced polypropylenes, engineered resins, color concentrates and additives. The company houses new and used plastic pellets for use in various automotive, consumer and industrial markets, in storage tanks which measure approximately 85' tall and 16' in diameter.

The Location

Fowlerville, Michigan

The Challenge

To cost-efficiently and effectively clean and coat seven of the company's 19 outdoor steel storage tanks in need of maintenance due to exposure to the elements.

The Solution

An AMERLOCK® 2 and AMERSHIELD™ system
The surface preparation used was a low pressure water cleaning (<5000 psi) with a rust-inhibiting additive to prevent the recurrence of rust during the blast, cleaning and contamination removal processes. NACE 4, SSPC-SP7 Brush Blast was used on tight existing coatings and NACE 6, SSPC-SP6 on corroded areas that required deeper preparation. Once the surface was clean and free of contaminants, PCE, LLC (Protective Coatings Epoxy Systems, an industrial coatings contractor) applied approximately 50 gallons of *Amerlock 2* epoxy coating. The final step involved the application of *Amershield* polyurethane which required approximately 100 gallons.

The Benefit

The surface tolerance and high performance characteristics of *Amerlock 2* epoxy, makes it an ideal choice for general maintenance coating for old and new steel alike. The ability to recoat with adherent rust remaining on the prepared surface proved beneficial on this project. Protecting these outdoor storage tanks with a top coat of *Amershield* will provide superior weather resistance along with lasting color and gloss retention.

The Result

Upon completion of the project in July 2014, the like-new appearance of the storage tanks was remarkable. The project was timely and cost-efficient and as a result, seven to nine additional tanks are slated for cleaning and coating in the spring of 2015.



PPG Protective & Marine Coatings

Bringing innovation to the surface.™

PPG Protective & Marine Coatings | One PPG Place | Pittsburgh | PA 15272 | Tel 888-9PPGPMC

Email PMCMarketing@ppg.com | Website ppgpmc.com/northamerica | PM00000X-USA | Created Month 10/14

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PPG PSX[®] 700

Premium performance solution for
long-term steel protection

In fewer coats, our patented technology delivers excellent adhesion, toughness,
corrosion and chemical resistance than other leading systems.





The standard in high performance coatings

Typical systems using PPG PSX 700

System-1: Zinc epoxy based

Zinc epoxy

Zinc epoxy¹

75 microns (3.0 mils)

Engineered siloxane

PPG PSX 700

125 microns (4.9 mils)

System-2: Zinc silicate based

Zinc silicate

Zinc silicate¹

75 microns (3.0 mils)

Engineered siloxane

PPG PSX 700

125 microns (4.9 mils)

System-3: Epoxy based

Epoxy mastic

Surface tolerant epoxy

125 microns (4.9 mils)

Engineered siloxane

PPG PSX 700

125 microns (4.9 mils)

¹ Zinc in compliance with ISO 12944.

Features and benefits of PPG PSX 700 engineered siloxane

Unsurpassed performance

Superior color and gloss retention

PPG PSX 700 significantly outperforms the polyurethane system in color and gloss retention. A traditional polyurethane method begins to lose its color and gloss at an exponential rate after five years of application, whereas PPG PSX 700 has been proven to retain it year after year.

Excellent corrosion and chemical resistance

PPG PSX 700 resists corrosion and chemicals far more than traditional epoxy coatings.

Better abrasion resistance

PPG PSX 700's abrasion resistance is greater than or equal to the flexible aliphatic polyurethane and superior to ordinary epoxy.

Supreme adhesive strength

PPG PSX 700 has an adhesive strength of 2700 psi (on steel, using ASTM D4541), more than double the strength of the 500-1000 psi offered by conventional epoxy coatings.

Limited accumulation of dirt and mildew

The low surface energy of PPG PSX 700's limits the accumulation of stains, graffiti and dirt, and enhances the ability of the surface to self-clean. For uncontrollable situations such as graffiti and defacement, the product is easy to clean and does not affect the original color and gloss. PPG PSX 700's inorganic chemical makeup protects substrate surfaces from being micro-pitted, which prevents mildew from attaching to it. This avoids potential long-term corrosion problems.

Unlimited topcoat window

PPG PSX 700's unlimited topcoat window make it easy for your field touch up and future maintenance.

Significant cost savings

Lower application costs

When comparing to a conventional three-coat system, there is one less coat to apply, which significantly reduces initial application costs.

Lower application time & downtime

Applying one less coat with PPG PSX 700 saves project labor time and costs. Plus, PPG PSX 700 saves project downtime by curing and drying to the touch in two hours at 20°C (68°F).

Easy maintenance, clean-dry-recoat

For future maintenance, instead of blasting old coatings and repainting as with traditional aliphatic polyurethane, PSX simply requires that you clean, dry and recoat the area with another coat of PPG PSX 700. The product reduces your operational shutdown time and money for maintenance projects.

Reduced waste management costs

PPG PSX 700 features low volatile organic compound content that reduces disposal costs.

Outstanding environmental characteristics

Isocyanate-free

PPG PSX 700 contains no hazardous isocyanates, which promotes a healthier working environment and has less impact on the environment.

Low voc emissions

PPG PSX 700 is formulated with high solids and extremely low volatile organic compounds and abides by stringent environmental requirements without compromising performance.



PPG Protective & Marine Coatings

January 7, 2020

The City of Novi
Public Works Department
26300 Lee BeGole Dr.
Novi, MI 48375

Re: Re-coating Elevated Water Tower

To Whom it May Concern:

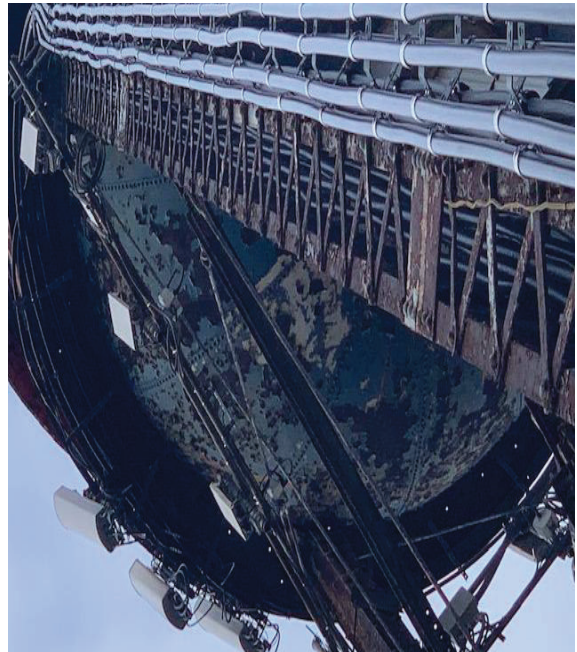
We are pleased to submit the following PPG protective coating recommendation for this project.

Evaluation of the Existing Coating System:

- **Visual appearance** – This tower is estimated to be at least 30+ year old. The existing coatings left on this structure are showing signs of delamination between layers and down to bare metal.



Total Steel Structure



Coating Delamination

PPG Protective Coating Recommendation – Exterior Tank Surfaces:

Surface Preparation – SSPC SP 6 Commercial Blast Cleaning @ 1.5-2.0 mil profile
It was reported that the existing coating/s contain lead. ***As a result, please use approved methods by Town of Novi, State of Michigan, and Federal OSHA & EPA for removal and disposal.***

PPG Protective Coating System –

Primer/Sealer – Amerlock Epoxy Penetrating Sealer @ 1.5-2.0 mils dry film thickness

Base Coat – Amerlock 2/400 Epoxy Coating S/G @ 4-5 mils dry film thickness

Finish Coat - PSX700 Epoxy Polysiloxane Coating Gloss @ 4-5 mils dry film thickness

Thank you for choosing PPG Protective Coatings for this upcoming project!

Sincerely,

Eliot Phillips

Eliot Phillips

Engineering Specifications & Project Manager

PPG Protective & Marine Coatings

NACE Coating Inspection Program (CIP) Level III Certified #3076

NACE Nuclear Power Plant Training for Coating Inspectors

5151 W. 122nd Street

Alsip, IL 60803

Mobile: 312-623-4382

E-Mail: ephillips@ppg.com

Web: www.ppgpmc.com



PSX[®] 700

Patented Two-Component Epoxy Polysiloxane

- Superior Color and Gloss Retention
- Excellent Corrosion and Chemical Resistance
- Outstanding Abrasion Resistance
- Supreme Adhesive Strength
- Limited Accumulation of Dirt and Mildew
- Unlimited Topcoat Window
- Lower Application Costs
- Lower Application Time & Downtime
- Easy Maintenance: Clean-Dry-Recoat
- Reduced Waste Management Costs
- Isocyanate-Free
- Low VOC Emissions



**PPG Protective &
Marine Coatings**

Bringing innovation to the surface.™

More Than Two Decades of Proven Performance

PSX 700 protective siloxane-epoxy coating maximizes performance, cost-savings and environmental responsibility within a variety of markets, from infrastructure to petrochemical and offshore to marine industries.



Peace Bridge

The Peace Bridge, connecting Buffalo, New York and Canada, was coated with *PSX 700* more than two decades ago. Despite brutal winter and humid summer conditions, the bridge has retained the gloss and color of the initial application.



Calumet Oil Storage Tanks

PSX 700 continues to protect the Calumet oil storage tanks located in Shreveport, Louisiana. The 9,000 square feet of carbon steel contains no mold or dirt stripes because *PSX 700* reduced low surface energy to shield away dirt and chemicals. The *PSX* system extended the service life of the tank, which translated to less repaint frequency.



Oshkosh Water Tower

PSX 700 was used to coat a water tower in Oshkosh, Wisconsin. Despite being situated directly next to Lake Michigan's moisture-abundant atmosphere, the tower still remains free of corrosion and mildew. It has also retained vibrant color and gloss, despite temperatures falling to minus 40°F during some winter months.



PSX[®] 700 Factor: 1+1=3

PSX 700 replaces traditional three-coat protective systems

Just one coat of PSX 700 can offer a longer service life than the traditional epoxy and aliphatic polyurethane system. When combined with an inorganic zinc primer (such as PPG's Dimetcote[®] Series Inorganic Zinc), the two-coat system can significantly outlast the best three-coat system on the market. PSX 700 offers easy maintenance, lower application time and reduced management costs, while providing superior color and gloss retention, corrosion and chemical resistance, and adhesive strength.

What is the PSX 700 Factor: 1+1=3

PSX 700 can be directly applied over inorganic zincs. Compared with traditional three-coat systems, PSX 700 saves your costs on labor and a layer of epoxy coating.

Service Life Projections

Plus, the PSX system outperforms the best three-coat system on the market.

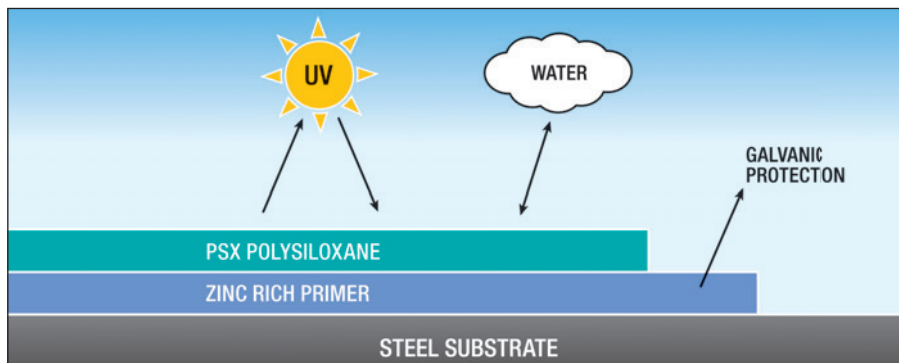
System	Number of Coats	Years of Service†	Conditions*
		SP-5	
PSX 700**	1	7.5-13	Moderate
		5-10	Severe
Epoxy/Urethane	2	6-10	Moderate
		4-8	Severe

* Moderate = General industrial, no heavy fumes or fallout, 3mils/year corrosion of steel.

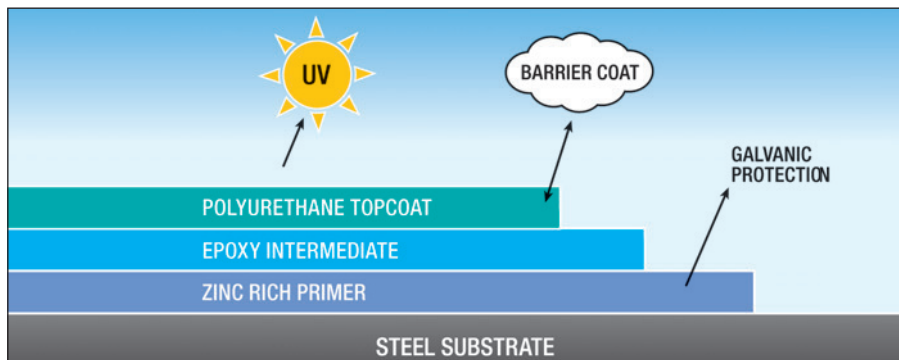
Severe = Heavy industrial, heavy fumes and fallout, 3-6 mils/year corrosion of steel.

** Assumes, conservatively, a 30% improvement in performance.
† Reference NACE Paper #335.

PSX[®] 700 Polysiloxane High Performance System



Traditional Three-Coat Systems



Before



After



Graffiti Resistance

A water tower in Hartford, Connecticut was coated with *PSX 700* when it fell subject to graffiti artists.

The Metropolitan District Commission used PPG's Amerase™ to erase the graffiti, without disturbing the tower's color and gloss.

Unsurpassed Performance

Benefit 1: Superior Color and Gloss Retention

PSX 700 significantly outperforms the polyurethane system in color and gloss retention. A traditional polyurethane method begins to lose its color and gloss at an exponential rate after five years of application, whereas *PSX 700* has been proven to retain them year after year.

Benefit 2: Excellent Corrosion and Chemical Resistance

PSX 700 resists corrosion and chemicals far better than traditional epoxy coatings do. (Figure 1 and 2)

Benefit 3: Outstanding Abrasion Resistance

PSX 700's abrasion resistance is greater than or equal to that of the flexible aliphatic polyurethane and superior to that of ordinary epoxy. (Figure 3)

Benefit 4: Supreme Adhesive Strength

PSX 700 has an adhesive strength of 2700 psi (on steel, using ASTM D4541), more than double the strength of the 500-1000 psi offered by conventional epoxy coatings.

Benefit 5: Limited Accumulation of Dirt and Mildew

The low surface energy of *PSX 700* limits the accumulation of stains, graffiti and dirt, and enhances the ability of the surface to self-clean. For uncontrollable situations such as graffiti and defacement, the product is easy to clean and cleaning does not affect the original color and gloss.

PSX 700's inorganic chemical makeup protects substrate surfaces from being micro-pitted, which prevents mildew from attaching to it. This avoids potential long-term corrosion problems.

Benefit 6: Unlimited Topcoat Window

PSX 700's unlimited topcoat window make it easy for you to perform field touch up and future maintenance.

Significant Cost Savings

Benefit 7: Lower Application Costs

When compared to a conventional three-coat system, there is one less coat to apply, which significantly reduces initial application costs.

Benefit 8: Lower Application Time & Downtime

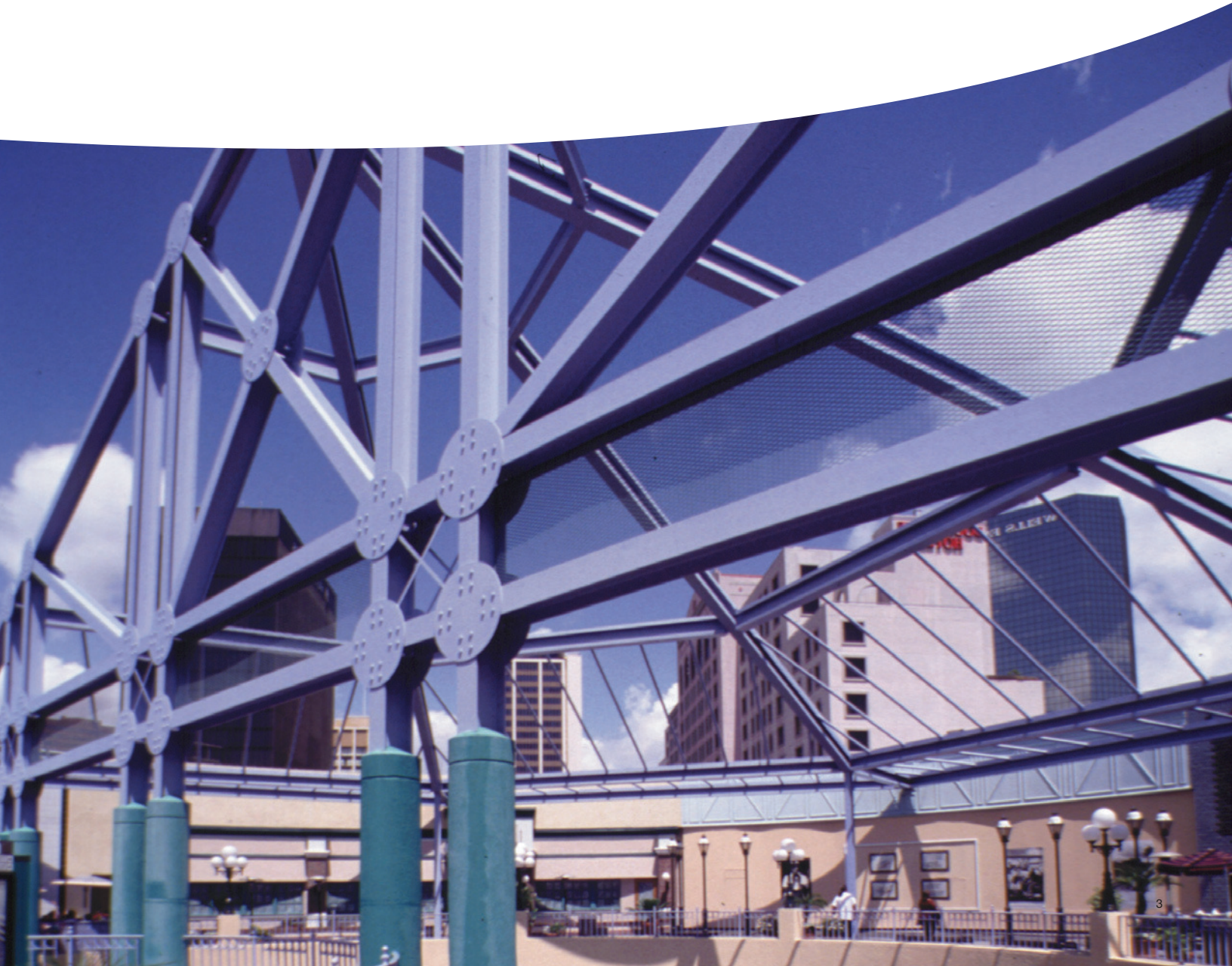
Applying one less coat with *PSX 700* saves project labor time and costs. Plus, *PSX 700* saves project downtime by curing and drying to the touch in two hours at 70°F (21°C).

Benefit 9: Easy Maintenance: Clean-Dry-Recoat

For future maintenance, instead of blasting old coatings and repainting as with traditional aliphatic polyurethane, *PSX* simply requires that you clean, dry and recoat the area with another coat of *PSX 700*. The product reduces your operational shutdown time and cost for maintenance projects.

Benefit 10: Reduced Waste Management Costs

PSX 700 features low volatile organic compound content, which reduces disposal costs.





Outstanding Environmental Characteristics

Benefit 11: Isocyanate-Free

PSX 700 contains no hazardous isocyanates, which promotes a healthier working environment and has less impact on the environment.

Benefit 12: Low VOC Emissions

PSX 700 is formulated with high solids and extremely low volatile organic compounds and abides by stringent environmental requirements without compromising performance.

No other coating provides the protection of *PSX 700*. *PSX 700* is the universal coating solution to maximize performance, cost-savings and environmental responsibility. The results are evident for customers who've used it for more than 20 years and would like to use *PSX 700* again for their next project. Contact a local PPG PMC sales representative for more information.

Performance Profile

Figure 1
Chemical Resistance (24-hour exposure)
 (Splash/spill resistance of PSX 700 compared to an epoxy mastic and an aliphatic polyurethane)

Chemical	PSX 700	Epoxy Mastic	Aliphatic Polyurethane
Sodium Hydroxide, 50%	10	10	10
HCL, Conc.	10	8	8
Sulfuric Acid, 93%	6	6	0
Phenol	8	2	0
Phosphoric Acid, Conc.	10	2	8
Acetone	10	8	10
Ammonium Hydroxide, Conc.	10	10	10
Ethy Alcohol	10	10	10

Figure 2
Salt Fog Resistance

System	DFT	Hours	Surface Prep	Blistering*	Face Corrosion	Scribe*
SBS/PSX 700	7 mils	5500	SSPC-SP10	10	10	6
SBS/Epoxy Mastic	7 mils	3000	SSPC-SP10	10	10	6

SBS – Sand-blasted steel RS – Rusted steel *10 = No change, 0 = Complete failure

Salt fog resistance: At equivalent dry film thickness, PSX 700 has 1.8 times the corrosion resistance of epoxy mastic over blasted steel. 1 mil = 25 microns

Figure 3
Abrasion Resistance

System	MG Loss
PSX 700	53
Flexible Aliphatic PU Finish	60
Epoxy Mastic	102

(1 kg load/1000 cycles, CS17 wheel)



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PMCMARKETING@ppg.com
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PM17047-USA
Created April 2015

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PPG Protective & Marine Coatings

Bringing innovation to the surface.™

PSX® 700

DESCRIPTION

Two-component, engineered siloxane coating

PRINCIPAL CHARACTERISTICS

- Unique, high gloss, engineered siloxane
- Can be applied directly over inorganic zinc
- Excellent color and gloss retention
- Resists graffiti
- High solids, VOC compliant
- Applied by brush, roller or spray, without thinning
- Good resistance to splash and spillage of chemicals
- Can be applied as a single coat, direct-to-metal for moderately corrosive environments (ISO 12944 C1-C3)

COLOR AND GLOSS LEVEL

- Full color range
- High gloss

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.4 kg/l (11.3 lb/US gal)
Volume solids	90 ± 2%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 119.0 g/kg max. 164.0 g/l (approx. 1.4 lb/US gal) EPA Method 24: 0.7 lb/US gal (84.0 g/l)
Temperature resistance (Continuous)	To 93°C (200°F)
Temperature resistance (Intermittent)	To 120°C (250°F)
Recommended dry film thickness	75 - 175 µm (3.0 - 7.0 mils) per coat
Theoretical spreading rate	7.2 m ² /l for 125 µm (289 ft ² /US gal for 5.0 mils)
Dry to touch	2 hours
Overcoating Interval	Minimum: 3 hours Maximum: Unlimited

PSX® 700

Data for mixed product**Shelf life**

Base: at least 36 months when stored cool and dry
 Hardener: at least 24 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Spreading rate and film thickness
- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time
- When applying more than one coat, it is recommended that the total DFT should not exceed 250 µm (10.0 mils)
- Color will drift at elevated temperatures
- Intermittent temperature resistance should be less than 5% of the time, and maximum 24 hours

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is proportional to the degree of surface preparation

Substrate conditions

- Steel; pretreated minimum ISO-Sa2 (SSPC SP-6) or higher with blasting profile 25 – 75 µm (1.0 – 3.0 mils)
- For touch up and repair, power tool cleaning in accordance with SSPC SP-11 is acceptable
- Galvanized steel; sweep blasted to roughen the surface to remove any zinc salts which might be present, SSPC SP-16 with blasting profile 40 – 75 µm (1.5 – 3.0 mils)
- Stainless steel and non-ferrous metal; degreased and sweep blast, SSPC SP-16 with blasting profile 40 – 100 µm (1.5 – 4.0 mils)
- Concrete / Masonry; see specific primer
- Compatible previous coat must be dry and free from any contamination
- When applied to zinc silicate primer, a mist coat and full coat technique is required. 15% thinning is recommended for mist coat
- Aged suitable coating must be dry and free from any contamination, it may require abrading prior to applying this product
- Prepare damaged areas to original surface preparation specifications, feathering edges of intact coating

Substrate temperature

- Substrate temperature during application and curing should be above 0°C (32°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point
- Relative humidity during application and curing should be above 40% to obtain optimal curing properties

Note: FD hardener should be used when ambient temperature is below 5°C (40°F)

SYSTEM SPECIFICATION

- Primers: Direct to substrate, DIMETCOTE Series, AMERCOAT 68 Series, AMERLOCK 400 / 2 Series, SIGMAZINC Series, AMERCOAT Epoxies and SIGMA Epoxies



PSX® 700

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 80:20 (4:1)

- Use a power mixer powered by an air or explosion-proof electric motor

Induction time

None

Pot life

4 hours at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

Air spray

Recommended thinner

THINNER 60-12 (AMERCOAT 911) or THINNER 21-06 (AMERCOAT 65) for global, THINNER 21-25 (AMERCOAT 101) is recommended for above 90°F (32°C) in US only

Volume of thinner

5 - 10%, depending on required thickness and application conditions

Nozzle orifice

1.5 – 2.0 mm (approx. 0.060 – 0.079 in)

Nozzle pressure

0.3 - 0.4 MPa (approx. 3 - 4 bar; 44 - 58 p.s.i.)

Airless spray

Recommended thinner

THINNER 60-12 (AMERCOAT 911) or THINNER 21-06 (AMERCOAT 65) for global, THINNER 21-25 (AMERCOAT 101) is recommended for above 90°F (32°C) in US only

Volume of thinner

0 - 5%, depending on required thickness and application conditions

Nozzle orifice

Approx. 0.38 – 0.48 mm (0.015 – 0.019 in)

Nozzle pressure

20.0 MPa (approx. 200 bar; 2901 p.s.i.)

PSX® 700

Brush/roller

- The recommended DFT cannot be reached in one coat
- Use a high quality natural bristle brush and / or solvent resistant, short nap roller. Ensure brush / roller is well loaded to avoid air entrainment
- Maintain a wet edge

Cleaning solvent

THINNER 90-53, THINNER 90-58 (AMERCOAT 12) or THINNER 60-12 (AMERCOAT 911)

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
75 µm (3.0 mils)	12.0 m ² /l (481 ft ² /US gal)
125 µm (5.0 mils)	7.2 m ² /l (289 ft ² /US gal)
175 µm (7.0 mils)	5.1 m ² /l (206 ft ² /US gal)

Overcoating interval for DFT up to 175 µm (7.0 mils) at RH 40% or above						
Overcoating with...	Interval	0°C (32°F)	5°C (41°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)
itself (when PSX 700 is used)	Minimum	N/A	20 hours	9 hours	4.5 hours	3 hours
	Maximum	N/A	Unlimited	Unlimited	Unlimited	Unlimited
itself (when PSX 700FD is used)	Minimum	20 hours	12 hours	7 hours	3 hours	2 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

Notes:

- Surface should be dry and free from any contamination
- When re-coat between dry through time and 7 days, solvent wipe surface with any of PSX 700 thinners prior to application of the second coat of PSX 700
- Hardener manufactured in Europe is fast drying version only with "PSX 700 FDE Hardener" name

Curing time with standard hardener for DFT up to 175 µm (7.0 mils) at RH 40% or above		
Substrate temperature	Dry to touch	Dry to handle
5°C (41°F)	9 hours	24 hours
10°C (50°F)	6 hours	11 hours
20°C (68°F)	3 hours	6 hours
30°C (86°F)	1.5 hours	4 hours



PSX® 700

Curing time with FD(fast drying) hardener for DFT up to 175 µm (7.0 mils) at RH 40% or above

Substrate temperature	Dry to touch	Dry to handle
0°C (32°F)	9 hours	24 hours
5°C (41°F)	7 hours	16 hours
10°C (50°F)	4.5 hours	8.5 hours
20°C (68°F)	2 hours	4.5 hours
30°C (86°F)	1 hour	3 hours

Notes:

- Adequate ventilation must be maintained during application and curing
- Hardener manufactured in Europe is fast drying version only with "PSX 700 FDE Hardener" name

Pot life (at application viscosity)

Mixed product temperature	Pot life
10°C (50°F)	6.5 hours
20°C (68°F)	4 hours
30°C (86°F)	1.5 hours

Note: Same pot life between normal and FD hardener

Product Qualifications

- SSPC Paint 36 Level 3 Performance
- NFPA Class A Flame Spread
- Compliant with USDA Incidental Food Contact Requirements
- Qualified for ISO 12944 C5 with several systems
- Qualified for NORSOK M501 Rev.6 System 1 with several systems
- Meets requirements of ANSI N5.12 and ASTM D5144 for Coating Service Level II

SAFETY PRECAUTIONS

- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes
- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.



PSX® 700

REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431
• CLEANING OF STEEL AND REMOVAL OF RUST	INFORMATION SHEET	1490
• SPECIFICATION FOR MINERAL ABRASIVES	INFORMATION SHEET	1491
• SURFACE PREPARATION OF CONCRETE (FLOORS)	INFORMATION SHEET	1496
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650
• PSX® 700 SILOXANE QUALITY ASPECT APPLICATION	INFORMATION SHEET	1721

WARRANTY

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AMERLOCK® 2 / SIGMACOVER™ 2

DESCRIPTION

Two-component, high solids epoxy coating

PRINCIPAL CHARACTERISTICS

- Low-temperature curing down to 0°C (32°F)
- High performance self priming universal epoxy
- High solids, low VOC
- Surface tolerant and abrasion resistant
- Compatible with prepared, damp surfaces
- Good adhesion on most existing coatings
- Good resistance to splash and spillage of chemicals
- Meets NSF Standard 61 for tanks, pipes, valves and fittings (US manufacturing only)
- Proven coating as a bulk rail lining and DTM exterior coating

COLOR AND GLOSS LEVEL

- Standard primer colors and custom colors
- Semi-gloss

Note: Epoxy coatings will chalk and fade with exposure to sunlight. Light colors are prone to ambering to some extent. Note that product tinted to custom colors are not recommended for immersion service. Only use factory grind batches for immersion

BASIC DATA AT 10°C (50°F)

Data for mixed product	
Number of components	Two
Mass density	1.4 kg/l (11.7 lb/US gal)
Volume solids	85 ± 2%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 114.0 g/kg max. 163.0 g/l (approx. 1.4 lb/US gal) EPA Method 24: 1.5 lb/US gal (180.0 g/l)
Temperature resistance (Continuous)	To 120°C (250°F)
Temperature resistance (Intermittent)	To 175°C (350°F)
Recommended dry film thickness	100 - 200 µm (4.0 - 8.0 mils)
Theoretical spreading rate	8.5 m²/l for 100 µm (341 ft²/US gal for 4.0 mils)
Dry to touch	6 hours
Overcoating Interval	See overcoating tables

AMERLOCK® 2 / SIGMACOVER™ 2

Data for mixed product	
Shelf life	Base: at least 36 months when stored cool and dry Hardener: at least 36 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Spreading rate and film thickness
- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time
- For compliance with regulations which require VOC less than 100 g/L, AMERLOCK 2 VOC can be specified interchangeably
- AMERLOCK 2 VOC is available only in US and Canada
- Intermittent temperature resistance should be less than 5% of the time, and maximum 24 hours
- Temperature resistance is in atmospheric condition. Please contact your PPG representative for immersion condition.

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is proportional to the degree of surface preparation. Remove all loose paint, mill scale, and rust. The surface to be coated must be dimensionally stable, dry, clean and free of grease, oil, and other foreign materials. When proper abrasive blast surface preparation is not practical, surfaces should be chipped clean and wire brushed to bare, clean material

Carbon steel

- For immersion service: steel; blast cleaned to ISO-Sa2½ (SSPC SP-10)
- For atmospheric service, abrasive blast to ISO-Sa2½ or minimum SSPC SP-6, power tool cleaned to ISO-St3 (SSPC SP-3) or hand tool cleaned to ISO-St2 (SSPC SP-2) or ultra high pressure water jet to SSPC SP WJ-2(L) / NACE WJ-2(L)

Concrete / Masonry

- Remove grease, oil and other penetrating contaminants according to ASTM D4258
- Abrade the surface per ASTM D4259 to remove all chalk and surface glaze or laitance. Achieve surface profile - ICRI CSP 3 to 5
- Fill voids as necessary with AMERCOAT 114 A epoxy filler
- Maximum recommended moisture transmission rate is 3 lbs / 1,000 ft² / 24 hours by moisture transmission test (ASTM F1869, calcium chloride test or by ASTM D4263, plastic sheet test)
- Alternatively, ASTM D4944 (Calcium Carbide Gas method) can be used, moisture content should not exceed 4%

Galvanized steel

- Remove oil or soap film with detergent or emulsion cleaner
- Lightly abrasive blast with a fine abrasive in accordance with SSPC SP-16 guidelines to achieve a profile of 40 - 75 µm (1.5 - 3.0 mils). When light abrasive blasting is not possible, galvanizing can be treated with a suitable zinc phosphate conversion coating
- Galvanizing that has had at least 12 months of exterior weathering may be coated after power washing to remove all contaminants and white rust

AMERLOCK® 2 / SIGMACOVER™ 2

Non-ferrous metals and stainless steel

- Remove all rust, dirt, moisture, grease or other contaminants from the surface
- Lightly abrasive blast with a fine abrasive in accordance with SSPC SP-16 guidelines to achieve a profile of 40 - 100 µm (1.5 - 4.0 mils)

Aged coatings and repairs

- Aged suitable coating must be dry and free from any contamination
- For single-pack coatings, extra precautions are necessary

Substrate temperature

- Substrate temperature during application and curing should be between -5°C (23°F) and 50°C (122°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point

SYSTEM SPECIFICATION

- Primers: Direct to substrate; DIMETCOTE Series, AMERCOAT 68 Series, AMERLOCK 2 / 400 Series, SIGMAZINC Series, AMERCOAT Epoxies and SIGMA Epoxies
- Topcoats: AMERCOAT 450 Series, SIGMADUR Series, SIGMACOVER Epoxies, AMERCOAT Epoxies, AMERSHIELD and PSX 700

Note: Please contact your PPG representative if using an alternate primer

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 50:50 (1:1)

- The paint should be stirred well before use, preferably by means of a mechanical mixer, to ensure homogeneity
- Add hardener to base and continue stirring until homogeneous

Induction time

Mixed product induction time	
Mixed product temperature	Induction time
0°C (32°F)	45 minutes
10°C (50°F)	30 minutes
15°C (59°F)	20 minutes
20°C (68°F)	10 minutes
Above 23°C (73°F)	None

AMERLOCK® 2 / SIGMACOVER™ 2

Pot life

2 hours at 10°C (50°F)

Note: See ADDITIONAL DATA – Pot life

Air spray**Recommended thinner**

THINNER 91-92 FOR GLOBAL, THINNER 21-06 (AMERCOAT 65) FOR NSF/ANSI 61, THINNER 91-82 (AMERCOAT T10) for NON NSF/ANSI 61 and < 90°F (32°C), THINNER 21-25 (AMERCOAT 101) for NON NSF/ANSI 61 and > 90°F (32°C)

Volume of thinner

0 - 10%, depending on required thickness and application conditions

Airless spray**Recommended thinner**

THINNER 91-92 FOR GLOBAL, THINNER 21-06 (AMERCOAT 65) FOR NSF/ANSI 61, THINNER 91-82 (AMERCOAT T10) for NON NSF/ANSI 61 and < 90°F (32°C), THINNER 21-25 (AMERCOAT 101) for NON NSF/ANSI 61 and > 90°F (32°C)

Volume of thinner

0 - 5%, depending on required thickness and application conditions

Nozzle orifice

Approx. 0.48 mm (0.019 in)

Nozzle pressure

15.0 - 18.0 MPa (approx. 150 - 180 bar; 2176 - 2611 p.s.i.)

Brush/roller

- Apply evenly using a well-loaded brush or roller
 - Application by brush or roller will provide approximately 80 µm (3.1 mils) DFT in a single-coat application
-

Cleaning solvent

THINNER 90-53, THINNER 90-58 (AMERCOAT 12) OR THINNER 21-06 (AMERCOAT 65)

AMERLOCK® 2 / SIGMACOVER™ 2

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
100 µm (4.0 mils)	8.5 m ² /l (341 ft ² /US gal)
125 µm (5.0 mils)	6.8 m ² /l (273 ft ² /US gal)
200 µm (8.0 mils)	4.3 m ² /l (170 ft ² /US gal)

Overcoating interval for DFT up to 200 µm (8.0 mils)					
Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)
itself and various two-pack epoxy coatings	Minimum	24 hours	12 hours	6 hours	3 hours
	Maximum	1 month	1 month	1 month	1 month
urethane and PSX	Minimum	24 hours	12 hours	6 hours	3 hours
	Maximum	14 days	14 days	7 days	4 days

Notes:

- Surface should be dry and free from any contamination
- A detergent wash with PREP 88, SIGMARITE 88 or equivalent is required prior to application of topcoats after 30 days of exposure
- If maximum recoat time has been exceeded, roughen surfaces
- Alkyd coatings and waterborne acrylic coatings should be applied after the film is dry to handle and not greater than three times dry to handle time
- Maximum recoating time is highly dependent upon actual surface temperature - not simply air temperatures. Sun-exposed or otherwise heated surface will shorten the maximum recoat window

Curing time for DFT up to 200 µm (8.0 mils)		
Substrate temperature	Dry to handle	Full cure
0°C (32°F)	38 hours	21 days
10°C (50°F)	14 hours	7 days
20°C (68°F)	5 hours	4 days
30°C (86°F)	3 hours	3 days

Note: Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)

AMERLOCK® 2 / SIGMACOVER™ 2

Pot life (at application viscosity)	
Mixed product temperature	Pot life
0°C (32°F)	4 hours
10°C (50°F)	2 hours
20°C (68°F)	1 hour
30°C (86°F)	30 minutes

Product Qualifications

- NORSOK M501 Rev. 5, System 7 Subsea surfaces
- Compliant with USDA Incidental Food Contact Requirements
- NFPA Class A for Flame Spread and Smoke Development
- Qualified for ANSI/NSF Standard 61 (potable water). For NSF application instructions, please visit the following website: <http://www.nsf.org/certified-products-systems/>
- AWWA D102-06 ICS #1, #2, #3, #5
- Nuclear Service Level 2 (ANSI N 5.12, ANSI N 101.2)
- LEED's compliant for Anti-corrosive Paint category

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431
• SAFE WORKING IN CONFINED SPACES	INFORMATION SHEET	1433
• DIRECTIVES FOR VENTILATION PRACTICE	INFORMATION SHEET	1434
• CLEANING OF STEEL AND REMOVAL OF RUST	INFORMATION SHEET	1490
• SPECIFICATION FOR MINERAL ABRASIVES	INFORMATION SHEET	1491
• SURFACE PREPARATION OF CONCRETE (FLOORS)	INFORMATION SHEET	1496
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650

AMERLOCK® 2 / SIGMACOVER™ 2

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

LIMITATIONS OF LIABILITY

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT. The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results. This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings Products are maintained at www.ppgpmc.com. The English text of this sheet shall prevail over any translation thereof.

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AMERLOCK® SEALER

DESCRIPTION

Two-component, penetrating epoxy primer sealer

PRINCIPAL CHARACTERISTICS

- Solvent-free
- Compatible with damp surfaces
- Wicking action penetrates rusted steel and concrete surfaces
- Surface tolerant for applications where abrasive blasting is not an option
- Accepts broad range of topcoats
- Excellent tie coat for many existing coatings

COLOR AND GLOSS LEVEL

- Clear
- Gloss

Note: Epoxies will characteristically chalk and fade with exposure to sunlight. Light colors are prone to ambering

BASIC DATA AT 68°F (20°C)

Data for mixed product	
Number of components	Two
Mass density	Base/hardener: 1.1 kg/l (9.0 lb/US gal)
Volume solids	100%
Temperature resistance (Continuous)	To 200°F (93°C)
Temperature resistance (Intermittent)	To 250°F (121°C)
Recommended dry film thickness	1.0 - 2.0 mils (25 - 50 µm) depending on system
Theoretical spreading rate	1604 ft ² /US gal for 1.0 mils (40.0 m ² /l for 25 µm)
Shelf life	Base: at least 36 months when stored cool and dry Hardener: at least 36 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time
- Color will drift at elevated temperatures
- Intermittent temperature resistance should be less than 5% of the time, and maximum 24 hours

AMERLOCK® SEALER

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is, in general, proportional to the degree of surface preparation
 - Use of this product provides a viable options for coating projects where abrasive blasting is not possible, but it is not a performance substitute for abrasive blasting in many circumstances
-

Steel

- Remove all rust, dirt, moisture, grease or other contaminants from the surface
 - Power tool clean in accordance with SSPC SP-3 or hand tool clean to SSPC SP-2 requirements. Alternately, abrasive blast to SSPC SP-7 requirements. Abrasive blasting to SSPC SP-6 or better is also allowable and will give the best possible system performance
 - This product may be applied over waterjetted surfaces as well
-

Aluminum

- Remove all rust, dirt, moisture, grease or other contaminants from the surface
 - Treat with conversion coatings or phosphatizing agents. Applicable over surface treatments such as MIL-C-5541. Alternately, lightly abrasive blast with fine abrasive to produce a uniform and dense anchor profile of 1.0 – 3.0 mils (25 – 75 µm) in accordance with SSPC SP-16.
-

Galvanizing

- Remove oil or soap film with detergent or emulsion cleaner, then use a phosphatizing conversion coating
 - Alternately, power tool clean to uniformly abrade the surface or lightly abrasive blast with a fine abrasive to produce a uniform and dense anchor profile of 1.0 – 3.0 mils (25 – 75 µm)
 - Galvanizing that has had at least 12 months of exterior weathering may be coated after power washing to remove all contaminants and white rust
 - Galvanized surfaces that have been passivated with a chromate treatment must be abrasive blasted. Coatings may not adhere to chromate sealed galvanizing if the chromates are not completely removed.
-

Concrete

- Existing Concrete – Water cured concrete or existing structures must be cured for a minimum of 14 days and have attained 80 percent of its final strength. When cured, the surface must be either prepared per ASTM D 4259 or ASTM D 4260 with muriatic acid using equal parts of acid to water by volume. Surface should be free of any oil, grease, embedded chemicals, laitance, water repellants, previous sealants, form release compounds, and effluorescence. The surface should be checked for moisture transmission in accordance with ASTM F1869 (calcium chloride test) or by ASTM D4253 (plastic sheet test). The maximum recommended moisture transmission rate is 3 lbs / 1,000 ft² / 24 hours
 - A suitably finished surface must have a uniform surface texture exposing fine aggregate resembling coarse sandpaper. If required, repeat acid etching or abrasive blasting until the surface texture is uniform
 - Concrete surfaces cured with conventional curing compounds or contaminated with form oils must be completely cleaned by ASTM D4259. Acid etching is not acceptable as it will not normally remove these compounds
-



AMERLOCK® SEALER

Substrate temperature and application conditions

- Surface temperature during application should be between 40°F (4°C) and 120°F (49°C)
- Surface temperature during application should be at least 5°F (3°C) above dew point
- Ambient temperature during application and curing should be between 40°F (4°C) and 120°F (49°C)

SYSTEM SPECIFICATION

- Primers: Direct to substrate
- Topcoats: AMERCOAT 100A, NOVAGUARD 840, PSX 758, AMERCOAT 450 Series Polyurethanes, AMERSHIELD, PSX 700, AMERCOAT 229T, AMERCOAT Epoxies, AMERLOCK Epoxies, PITTGUARD Epoxies

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 50:50 (1:1)

- Add hardener to base and agitate with a power mixer for 1 to 2 minutes until completely mixed

Induction time

Mixed product induction time	
Mixed product temperature	Induction time
40°F (4°C)	15 minutes
50°F (10°C)	15 minutes

Pot life

1 hour at 70°F (21°C)

Note: See ADDITIONAL DATA – Pot life

Application

- Area should be sheltered from airborne particulates and pollutants
- Avoid combustion gases or other sources of carbon dioxide that may promote amine blush and ambering of light colors
- Ensure good ventilation during application and curing
- Provide shelter to prevent wind from affecting spray patterns

Material temperature

Material temperature during application should be between 40°F (4°C) and 90°F (32°C)

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Air spray

- Use standard conventional equipment
- Separate air and fluid pressure regulators and a moisture and oil trap in the main air supply line are recommended.

Recommended thinner

THINNER 21-06 (AMERCOAT 65) (xylene), THINNER 21-25 (AMERCOAT 101) (recommended for > 90°F (32°C))

Volume of thinner

0 - 20%

Nozzle orifice

Approx. 0.070 in (1.8 mm)

Airless spray

- 30:1 pump or larger

Recommended thinner

THINNER 21-06 (AMERCOAT 65) (xylene), THINNER 21-25 (AMERCOAT 101) (recommended for > 90°F (32°C))

Volume of thinner

0 - 5%, depending on required thickness and application conditions

Nozzle orifice

0.013 – 0.015 in (approx. 0.33 – 0.38 mm)

Brush/roller

- Use a high quality natural bristle brush and/or solvent resistant, 1/4" nap roller. Ensure brush/roller is well loaded to avoid air entrainment. Multiple coats may be necessary to achieve adequate film-build

Recommended thinner

AMERCOAT 65 (Xylene)| AMERCOAT 101 (recommended for >90°F (32°C))

Volume of thinner

Up to 5% THINNER can be added if desired

Cleaning solvent

AMERCOAT 12 CLEANER or AMERCOAT 65 THINNER (xylene)

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ADDITIONAL DATA

Overcoating interval for DFT up to 2.0 mils (51 µm)				
Overcoating with...	Interval	50°F (10°C)	70°F (21°C)	90°F (32°C)
recommended topcoats	Minimum	30 hours	24 hours	18 hours
	Maximum	30 days	30 days	14 days

Notes:

- Dry times are dependent on air and surface temperatures as well as film thickness, ventilation, and relative humidity. Maximum recoating time is highly dependent upon actual surface temperatures – not simply air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window
- Surface must be clean and dry. Any contamination must be identified and removed. A detergent wash with PREP 88 or equivalent is required prior to application of topcoats after 30 days of exposure. However, particular attention must be paid to surfaces exposed to sunlight where chalking may be present. In those situations, a further degree of cleaning may be required. PPG Technical Service can advise on suitable cleaning methods. If maximum recoat/topcoat time is exceeded, then roughen surface.

Curing time for DFT up to 2.0 mils (51 µm)		
Substrate temperature	Dry to touch	Dry hard
50°F (10°C)	18 hours	36 hours
70°F (21°C)	12 hours	28 hours
90°F (32°C)	8 hours	22 hours

Pot life (at application viscosity)	
Mixed product temperature	Pot life
50°F (10°C)	100 minutes
70°F (21°C)	60 minutes
90°F (32°C)	30 minutes

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

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REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

LIMITATIONS OF LIABILITY

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT. The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results. This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings Products are maintained at www.ppgpmc.com. The English text of this sheet shall prevail over any translation thereof.

Packaging: Available in 2-gallon kits; (2-gallon kits have 1 full gallon of base in a 3-gallon container and 1 full gallon of hardener)

Product code	Description
AK-0A	Base
AK-0B	Hardener

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